IRON AGE
Semi-Annual Index

January-June 1964 • Volume 193

Microfilm Copies

Complete microfilm copies of The IRON AGE, text and advertising, are available beginning with Vol. 161 (1948) through the issues covered in this index. For information write to University Microfilms, 313 N. First St., Ann Arbor, Mich.

IRON AGE INDEX Volume 193 • January-June, 1964

The IRON AGE

SEMI-ANNUAL INDEX

January-June, 1964 Volume 193

CLASSIFIED INDEX

A

AC Spark Plug, See General Motors Co.

Abrasives

Abradable Coatings Resist Heat, Apr 30 p 137
Abrasive Machining Goes Big, by R. H. Eshelman, Feb 27 p 55
Abrasive Machining: The Big Bite of Tiny Grains, by R. H. Eshelman, Apr 9 p 93
Parts Gain Controlled Finish in Continuous Vibrator, by R. H. Eshelman, June 25 p 86
Take Heavier Cut, Abrasive Users Told, by T. M. Rohan, Mar 26 p 70

Adhesives

Adhesive 'Cold Bonds' Steel to Paper Honeycomb Core, by R. H. Lindbloom, Mar 19 p 84
Adhesives Set Up New Products, by A. W. Young, Apr 30 p 127

Aerojet-General Corp.:

Computer Cuts Corners in Turning, Mar 26 p 108
Project Gets Workers Interested in Politics, by R. R. Kay, Feb 6 p 52

Aeronca Corp.:

Aluminum's Boiling Pot of Ideas, by C. L. Kobrin, June 18 p 93

Aeroprojects, Inc.:

Ultrasonics Makes Ring Welds, Apr 30 p 140

Aerospace

Challenge: Ways to Work Metals in Rigors of Outer Space, by R. H. Eshelman, Mar 19 p 79
Farwest Helps Set Pace in Race to the Moon, by R. R. Kay, May 28 p 44
Hot Targets Flash Flaw Patterns, by W. N. Redstreake, Mar 5 p 65
Plastics Shape Production Records, by J. M. Still, Jr., Feb. 6 p 41
Space Tool Bucking Torque, Jan 23 p 57
Stiff Spindle Speeds Cutting, by R. H. Eshelman, June 25 p 78
Testing for 100% Reliability, by R. H. Eshelman, May 28 p 66
Why not Use Metal Wires in Filament Winding? by D. V. Rosato, Mar 26 p 102
Wire Cleans Up Weld Process, June 4 p 71

Aerospace Industry

Aerospace's Future Hinges on Planning, by R. R. Kay, Jan 23 p 36
California Prepares for Spending Cuts, by R. R. Kay, Feb 13 p 56
Golden Year Ahead for Farwest Metals, by R. R. Kay, Jan 2 p 138
What's Keeping the Northwest Strong? by R. R. Kay, June 25 p 56

Air, See Power

Air Conditioning

Airconditioning Sales Continue Hot Pace, by K. W. Bennett, Jan 30 p 64
Worker Wears Own Air Conditioner, Mar 12 p 143

Air Products & Chemical Co.:

Aluminum's Boiling Pot of Ideas, by C. L. Kobrin, June 18 p 93
Wound Tubing: Novel Approach to Aluminum Fabrication, by R. R. Irving, May 7 p 73

Air Reduction Co.:

Helium Markets Are Expanding, by James Beizer, June 18 p 65
Welding Rides on a Carousel, Jan 16 p 70

Aircraft

A-11 Sets Pace in Mach Race, Mar 12 p 114
Business Planes Crowd the Sky, by A. M. Cooper, Jan 16 p 39

Alan Wood Steel Co.:

Plating Teams Up With Rolling to Clad Nickel onto Steel, by J. E. Sandford, May 28 p 63

Allegheny-Ludlum Steel Corp.:

How Foreign Mills Look to U.S. Steelmakers—From the Inside, by G. J. McManus, Feb 20 p 85
Quick-Change Dies for Drawing, Mar 5 p 75
Stainless Shakes Off Old Image, by C. L. Kobrin, Jan 30 p 87

Allied Chemical Corp.:

Primer Saves Finishing Steps on Reinforced Plastic, June 11 p 154

Alloy Steel

'Alloys' Strengthen Plate Sales, by K. W. Bennett, Feb 20 p 90
Low-Carbon Steels: New Analyses Improve Enameling Traits, June 4 p 66
Tellurium Helps Bars Shed Chips, Apr 9 p 104

Alloys

Aluminum's Boiling Pot of Ideas, by C. L. Kobrin, June 18 p 93
Hard Alloys Drawn Without Scoring, Feb 20 p 130
Hopkins Process Finds New Facets, Feb 6 p 72
Welds in Rene 62 Resist Cracking, Jan 16 p 77
Zincmakers Introduce New Auto Trim Alloy, Apr 23 p 61

Alloys Research & Mfg. Corp.:

Aluminum Made Into Bearings by New Powder Process, by C. L. Kobrin, Apr 30 p 135

Aluminium Ltd.:

Aluminum's Boiling Pot of Ideas, by C. L. Kobrin, June 18 p 93

Aluminum:

Alcoa OK's Aluminum Ingot Hike, by James Beizer, Mar 12 p 104
Alcoa Reverses Stand; Follows Olin Lead, by James Beizer, June 18 p 66
Aluminum Barges into Marine Markets, by K. W. Bennett, Apr 9 p 69
Aluminum Gains Again in Autos, by H. F. Jones, Jan 23 p 35
Aluminum Made Into Bearings by New Powder Process, by C. L. Kobrin, Apr 30 p 135
Aluminum's Boiling Pot of Ideas, by C. L. Kobrin, June 18 p 93
Aluminum Shines, Lead Dulls in Washington, by R. R. Kay, Apr 2 p 30
Aluminum Wants Transport Market, by P. J. Cathey, Feb 20 p 88
Can Market Battle Forces Basic Changes in Aluminum Steel, by G. J. McManus, Mar 5 p 31
Brittle Metals Turn Ductile in Hydrodynamic Forming, May 28 p 68
Demand Swings to Durables With a Rush, by R. D. Raddant, Mar 12 p 121
Hot Punch Shapes New Laminate, Apr 2 p 64
Marketing Discord Increases as Aluminum Orders Gain, by G. J. McManus, May 7 p 43
Olin Tries Aluminum Ingot Price Hike, by James Beizer, June 11 p 113
Siphon Transfers Molten Aluminum, Mar 5 p 68
Teflon Seals Aluminum Hardcoat, by J. E. Sandford, Mar 19 p 82
Wound Tubing: Novel Approach to Aluminum Fabrication, by R. R. Irving, May 7 p 73

Aluminum Co. of America:

Aluminum's Boiling Pot of Ideas, by C. L. Kobrin, June 18 p 93
Hand That Feeds Is Snapped At, by G. J. McManus, June 25 p 43
Price Schedules Simplify Buying, Feb 6 p 111

Aluminum Industry

Aluminum Profits Up; Price Increases Seen, by James Beizer, Apr 30 p 103
No End in Sight for Business Spending Boom, June 4 p 49
Nonferrous Markets Continue Growth, by F. J. Starin, Jan 2 p 131
Price Fire Engulfs Aluminum, Fans Out to Many Product Areas, by P. J. Cathey, Jan 23 p 23

Amchem Products, Inc.:

Controls Keep Sales Effort on Target, by P. J. Cathey, May 14 p 76
Electronic Touch Guides Coating in Automotive Prepaint Line, June 18 p 104

American Assn. of Industrial Management:

Vacation Policies Grow More Liberal, June 25 p 61

American Brake Shoe Co.:

Slow Managers Lose in Fast-Paced World, by J. M. Still, Jr., Apr 16 p 46

American Can Co.:

Aluminum's Boiling Pot of Ideas, by C. L. Kobrin, June 18 p 93

American Carbide Co., See Allegheny-Ludlum Steel Corp.:

American Die Casting Institute

Die Casters Shaped Record Year in '63, Apr 9 p 65

American Institute of Executives

Applying New Drive to Managing May 14 p 75

American Iron & Steel Institute, Inc.:

Steel Chief Dissects Industry's Future, Feb 27 p 45
Steelmen Cite Prospects, Problems, by G. J. McManus, June 4 p 32

American Motors Corp.:

AM Attacks Horsepower Race, May 28 p 43
AM Caught in 'Buy American', by H. F. Jones, Feb 20 p 97
AM Launches a New 'Typhoon', by H. F. Jones, Apr 9 p 75
Profit Dip Hurts AM Progress Sharing, by H. F. Jones, June 18 p 70

American Optical Co.:

Machining to Tool Room Specs, Feb 27 p 82

Anaconda Co.:

Plan Steps Up R&D Pace and Payoff, by Carl E. Woodward, Jan 9 p 38
Tailored Tests Upgrade Copper, by Paul Garatoni, Apr 23 p 92

Antitrust, see Government; Legislation; Prices

Apex Machine & Tool Co.:

Fastener Design Prevents Camout, Feb 6 p 76

Appliance Industry:

Appliance Makers Boost Capital Outlays; Shoot for Record Year, by K. W. Bennett, Mar 12 p 101
Appliance Sales Are Sizzling, by K. W. Bennett, May 28 p 36
Demand Swings to Durables With a Rush, by R. D. Raddant, Mar 12 p 121
Heating Future Has Healthy Glow, by K. W. Bennett, Mar 5 p 38
'64 Looks Good for Appliances, by K. W. Bennett, Jan 2 p 132
Soft Spots Give Lean Look to New Orders for Durables, by J. D. Baxter, Feb 13 p 43

Appliances:

Low-Carbon Steels: New Analyses Improve Enameling Traits, June 4 p 66

Armco Steel Corp.:

Feeding a Hungry Blast Furnace, June 11 p 148
Microfilms, EDP Combined in File, June 18 p 140

Assn. of Consulting Management Engineers

Marketers Face Challenge in '64, Jan 2 p 143

Atlantic Casting & Engineering Corp.:

Plaster or Investment Casting: When to Use Each Method? by G. H. Binns, June 4 p 68

Atlas Electrical Devices, Inc.:

PA Stresses Human Relations, Apr 16 p 103

Atomic Energy

The Peacetime Atom Blasts Away at Metalworking Barriers, by W. N. Redstreake, May 14 p 87
Stanford Builds Atom Smasher 2-Miles-Long, by R. R. Kay, May 14 p 72
Steelmen Extend Nuclear Gaging, Mar 12 p 144
Washington Plans for Atom Center, by R. R. Kay, Feb 27 p 52

Atomic Energy Commission

X-Ray Unit Made Pocket Size, Jan 9 p 60

Austenal Co., See Howe Sound Co.:

Automation

Air-to-Electronic Gaging System 'Mikes' Bores; Checks Tapers, May 28 p 72
Automatic Drafting on Low-Cost Unit, Mar 12 p 148
Automatic System Logs Length of Sections in Hot Mill, Mar 26 p 104
Automation Lifts Handling Sales, by P. J. Cathey, May 14 p 64
Friden, Inc., Adds Three New Units, June 4 p 99
GE Offers Low-Cost N/C Unit, Jan 23 p 37
Hitting the Numbers Pays Off, by H. F. Jones, Apr 30 p 102
How Long Until 'Full' Automation? By R. H. Eshelman, Apr 9 p 79
Human Adjustment to Automation Studied, by R. H. Eshelman, Feb 20 p 101
IBM Has ADE Plan for Busy Engineers, Jan 16 p 41
Machines Do Work of Skilled Hands, by F. J. Riley, Feb 13 p 82
Metal Industries Step Up Automation Trend, by R. H. Eshelman, May 21 p 119
Mixed News in Job Trend Survey, by R. W. Crosby, Apr 23 p 58
N/C Blends With Transfer Lines, by R. H. Eshleman, Mar 19 p 65
N/C Boomed for Job Shop Runs, Mar 12 p 117
N/C Course for Builders, Buyers, Jan 16 p 51
N/C Tackles Shorter Work Runs, Jan 30 p 97
New N/C Concept Cuts Parts Down to Size, by R. H. Eshelman, Feb 13 p 59
Pneumatic N/C Machine Tools Put Job Shop 'In the Chips', by W. N. Redstreake, Apr 16 p 62
Programmer Runs Vacuum Melting, Jan 16 p 80
Pushing N/C for Peak Efficiency, Apr 23 p 96
Retreat from Boredom Pays Off, by H. F. Jones, Jan 16 p 54
Skilled Workers: The Big Need Is a Push from the Top, by Eugene C. Beaudet, May 21 p 210
Technology Goes Abroad by Rough Sales Route, by Richard Raddant, June 18 p 82
Thermosets Take Shape Quickly in 'Injection' Molding Units, Jan 9 p 58
Tomorrow's Machining Already Taking Shape, by R. H. Eshelman, June 25 p 59
See also Data Processing; Electronic Devices & Controls; Machine Tools; Process Control

Automation Industries, Inc.:

Angled Sound Waves Find Flaws, Feb 13 p 87
Tests Insure Sound Castings, Feb 20 p 128

Automobiles & Trucks

AM Launches a New 'Typhoon', by H. F. Jones, Apr 9 p 25
Aluminum Gains Again in Autos, by H. F. Jones, Jan 23 p 35
Attention Centers on Big Cars, by H. F. Jones, May 7 p 55
Auto Designs Are Internationalized by James Beizer, Apr 16 p 36
Auto Plastics Pick Up Speed, by H. F. Jones, Mar 12 p 118
Barracuda, Mustang Enter Sports Arena, by H. F. Jones, Apr 2 p 29
Daytona Test Feathers Comet's Nest, by H. F. Jones, Jan 16 p 49
Design Battle Highlights Race, by R. R. Kay, May 21 p 116
Diversification Pays Off for IH, by H. F. Jones, June 4 p 41
First Word Is Out on Auto Steep Dip, by H. F. Jones, Mar 5 p 33
Ford Frames Changes for '65 Models, by H. F. Jones, Feb 27 p 51
GM Stylists Raise the Roof, by H. F. Jones, Feb 6 p 51
GMC to Field Widest Medium Diesel Line, by H. F. Jones, Jan 9 p 31
Materials Hold Auto Spotlight, by H. F. Jones, Jan 23 p 28
New Designs Needed for Autos, by H. F. Jones, Mar 19 p 63
Rootes Puts an Imp in the Import Market, Mar 12 p 107
SAE Seeks Solution to Smog, by H. F. Jones, June 18 p 75
Steel Courts Autos With Ideas, by H. F. Jones, June 11 p 123
Wagons Join the Style Parade, by H. F. Jones, Apr 16 p 41
Zincmakers Introduce New Auto Trim Alloy, Apr 23 p 61

Automobiles & Trucks, Engines & Parts

Air-to-Electronic Gaging System 'Mikes' Bores; Checks Tapers, May 28 p 72
Aluminum's Boiling Pot of Ideas, by C. L. Kobrin, June 18 p 93
Approval Seen for Smog Control Units, by R. R. Kay, Mar 5 p 44
Automakers Shift to Fourth Gear, by H. F. Jones, Apr 23 p 67
Chrysler Expands Canadian 'Trade', by H. F. Jones, Mar 5 p 43
Four Smog Devices OKd by California, by H. F. Jones, June 25 p 55
Pack More Horses Under the Hood, by H. F. Jones, May 28 p 43
Parts Gain Controlled Finish in Continuous Vibrator, by R. H. Eshelman, June 25 p 86
Parts Makers Protest Tariff Rebate Plan, by H. F. Jones, June 11 p 115
Plymouth and Dodge Unveil New Engines, by H. F. Jones, Feb 13 p 55

Automotive Industry

AM Caught in 'Buy American', by H. F. Jones, Feb 20 p 97
Auto P'As Stress Material Costs, Apr 2 p 85
Automakers Give Tool Orders Sharp Boost, by R. H. Eshelman, May 28 p 47
Automakers Must Move Ahead or Lose Out, by H. F. Jones, Apr 30 p 109
Automakers Shoot for New Record, by H. F. Jones, Jan 2 p 137
Automakers Stress Better Quality, by H. F. Jones, Apr 9 p 68
Autos Play "Follow-the-Leader" to Keep '65 Sales Moving, by H. F. Jones, June 11 p 111
Can UAW Settle Without Strike? By H. F. Jones, Jan 2 p 129
Demand Swings to Durables With a Rush, by R. D. Raddant, Mar 12 p 121
Die Shops Pressed for Press Time, by H. F. Jones, Mar 12 p 108
GM Bets Another $2 Billion, by H. F. Jones, Mar 26 p 79
L-M Springs First Mid-'64 Autos, by H. F. Jones, Jan 30 p 69
Materials Battle Is Tug-of-War, by H. R. Neal, Feb 20 p 104
No End in Sight for Business Spending Boom, June 4 p 49
UAW Goes After Big Package as Automakers Have Big Year, by H. F. Jones, May 28 p 31
UAW Is Aiming for Big Slice of Auto Industry Profit Pie, by H. F. Jones, Feb 6 p 39
UAW Leaves Door Wide Open for Anything — as Long as It's 'More', By H. F. Jones, Apr 2 p 21

B

Babcock & Wilcox Co.:

Steel Gains 'Protective Blanket' During Heat Treating Cycle, June 11 p 146

Baldwin-Lima-Hamilton Corp.:

Tubes Extruded Under Water, Jan 16 p 73

Bars & Shapes

Tellurium Helps Bars Shed Chips, Apr 9 p 104

Bart Mfg. Co.:

Plating Teams Up With Rolling to Clad Nickel onto Steel, by J. E. Sandford, May 28 p 63

Battelle Memorial Institute, Inc.:

Fighting Friction's Drag on Motion, by J. J. Obrzut, May 21 p 133
Washington Plans for Atom Center, by R. R. Kay, Feb 27 p 52

Bay State Abrasive Products Co.:

Abrasive Machining: The Big Bite of Tiny Grains, by R. H. Eshelman, Apr 9 p 93

Morris Bean & Co.:

Casting Refunds: Pro and Con, Mar 26 p 137

Bearings

Aluminum Made Into Bearings by New Powder Process, by C. L. Kobrin, Apr 30 p 135
Bearings Roll Into New Markets, by T. M. Rohan, Mar 26 p 74
Engineers Put Friction to Rout via New Lubrication Concept, by J. E. Sandford, Jan 23 p 51
Fighting Friction's Drag on Motion, by J. J. Obrzut, May 21 p 133
SKF Increases Bearing Prices, Jan 9 p 83
Teflon Fabric Lubricates Bearings, Feb 27 p 79

Bell Telephone Laboratories:

Hot Punch Shapes New Laminate, Apr 2 p 64

Bendix Corp.:

Coded Form Puts Zip in Handling, by G. J. Gunderman, May 14 p 91
Modular Grinder Is Tailored to Its Tasks, by R. H. Eshelman, June 11 p 127
Pushing N/C for Peak Efficiency, Apr 23 p 96

Bethlehem Steel Corp.:

Direct Casting, Vacuum Degassing Score Gains, by G. J. McManus, Feb 6 p 43
Hybrid Gas Cuts Cutting Costs, June 11 p 153
Low-Carbon Steels: New Analyses Improve Enameling Traits, June 4 p 66
Mill Rolls Circular Steel Plate, by C. L. Kobrin, Feb 6 p 80

Black & Decker Mfg. Co.:

Space Tool Corrals Bucking Torque, Jan 23 p 57

Blackie, William

New Markets, New Challenges Face U.S. in World Trade, May 7 p 60

Blaw-Knox Co.:

National Nails Down Casting Project, Mar 26 p 73

E. W. Bliss Co.:

Press Makers May Stamp Out Old Record and Form New One this Year, by K. W. Bennett, Mar 26 p 67
Press Extrudes, Upsets, Pierces, May 21 p 144

Bloomingdale Rubber Co.:

Adhesives Set Up New Products, by A. W. Young, Apr 30 p 127

Blue Water Drilling Co.:

Huge Steel Iceberg to Seek Oil, by R. R. Kay, June 4 p 42

Bodine Corp.:

Machines Do Work of Skilled Hands, by F. J. Riley, Feb 13 p 82

Boeing Co.:

'Company Town' Hurts When Company's Down, by R. R. Kay, Jan 9 p 32
Milling With an Eye of Light, Mar 5 p 70

Bonding

Abradable Coatings Resist Heat, Apr 30 p 137
Coatings Go on Fast, Evenly With Electrophoresis, May 7 p 80
Conversion Coat Works Overtime, Apr 16 p 69
Fusion Process Bonds Carbide to Steel, Mar 19 p 92
Hot Punch Shapes New Laminate, Apr 2 p 64
Plastic Tightens Grip on Metal, Mar 26 p 100
Tough Ceramic and Metal Unite to Defy Heat and Corrosion, Jan 9 p 49
Ultrasound Maps Flaws in Bonds, by W. N. Redstreake, Jan 23 p 58
See also Adhesives; Joining

Booz, Allen & Hamilton, Inc.:

Metals Take Big Part in U.S. Moves Abroad, June 4 p 33

Borg-Warner Corp.:

Automakers Shift to Fourth Gear, by H. F. Jones, Apr 23 p 67
Common Goal Welds Team Effort, by Lester G. Porter, Jan 2 p 158
Hopkins Process Finds New Facets, Feb 6 p 72
The PA Can Aid Free World Trade, June 4 p 99
Plastic Tightens Grip on Metal, Mar 26 p 100

Bridgeport Brass Co.:

How to Bend Tubing Efficiently, Mar 12 p 146

British Cast Iron Research Ass'n. (BCIRA):

'Sounding Out' Cast Structures, May 21 p 146

Budd Co.:

Stainless Shakes Off Old Image, by C. L. Kobrin, Jan 30 p 87

Buhr Machine Tool Co.:

Rotary Indexers Find New Slots, by R. H. Eshelman, Apr 23 p 71

Bullard Co.:

Pre-Set Tools Cut Downtime, by R. H. Eshelman, Apr 30 p 113

Burroughs Corp.:

Is the Trend to Move Abroad? Jan 9 p 23
Technician Shortage Stirs New Action, Mar 19 p 53

Business Issues, see Beaudet, Eugene C.

C

Cambridge Thermionic Corp.:

Fighting Friction's Drag on Motion, by J. J. Obrzut, May 21 p 133

Camcar Screw & Mfg. Co., See Textron Industries, Inc.

Canada

Chrysler Expands Canadian 'Trade,' by H. F. Jones, Mar 5 p 43
Parts Makers Protest Tariff Rebate Plan, by H. F. Jones, June 11 p 115

Carborundum Co.:

Abrasive Machining: The Big Bite of Tiny Grains, by R. H. Eshelman, Apr 9 p 93
Master Plan Guides New Products to Moneymaking Maturity, by J. E. Sandford, Apr 2 p 51

Carpenter Steel Co.:

New Stainless Fights Hot Acids, Feb 6 p 82

Casting

Foundry Industry Gathers Momentum, May 7 p 48
Washington Praises Pressure Casting, by G. J. McManus, Jan 23 p 25

Casting, Continuous:

Continuous Casting in Decisive Period, by G. J. McManus, Feb 20 p 91
Direct Casting, Vacuum Degassing Score Gains, by G. J. McManus, Feb 6 p 43
National Nails Down Casting Project, Mar 26 p 73
New USS Strip Mill Fed by Continuous Casting, May 7 p 47

Casting, Die:

Die Casters Shaped Record Year in '63, Apr 9 p 65

Casting, Investment

Castings Shed Stresses in Argon Furnaces, Mar 5 p 78
Plaster or Investment Casting: When to Use Each Method? By G. H. Binns, June 4 p 68

Casting, Sand

Data System Guides Moldmaking, May 28 p 76
Sand Castings Gain Precision With Flaskless Molds, May 7 p 78

Castings

Cast Nylon Parts Resist Wear in Steel Mills and Presses, Jan 23 p 62
Job Shop Finds Pores in Castings With Low Cost Leak Testing, Mar 5 p 76

Castings, Ferrous

Guidelines for Ductile Iron Stress Structure Control, May 14 p 96
'Sounding Out' Cast Structures, May 21 p 146
Tests Insure Sound Castings, Feb 20 p 128

Castings, Nonferrous

Aluminum's Boiling Pot of Ideas, by C. L. Kobrin, June 18 p 93
Casting Refunds: Pro and Con, Mar 26 p 137
Siphon Transfers Molten Aluminum, Mar 5 p 68

A. M. Castle & Co.:

Abrasive Machining: The Big Bite of Tiny Grains, by R. H. Eshelman, Apr 9 p 93

Caterpillar Tractor Co.:

How Residual Stress Affects Fatigue, Mar 12 p 139
New Markets, New Challenges Face U.S. in World Trade, May 7 p 60

Ceramics

Tough Ceramic and Metal Unite to Defy Heat and Corrosion, Jan 9 p 49

Cerro Corp.:

Cerro Sales VP Plays Dual Role, June 25 p 112
Hand That Feeds Is Snapped At, by G. J. McManus, June 25 p 43
Tubes Extruded Under Water, Jan 16 p 73

Chase Manhattan Bank

Questions, But Not all the Answers to Growth Puzzle, by Eugene C. Beaudet, Jan 9 p 92

Chicago Grinding & Machine Co.:

Abrasive Machining Goes Big, by R. H. Eshelman, Feb 27 p 55
Abrasive Machining: The Big Bite of Tiny Grains, by R. H. Eshelman, Apr 9 p 93

Chromalloy Corp.:

Fusion Process Bonds Carbide to Steel, Mar 19 p 92
How Diffused Chromium Boosts Permeability, May 28 p 71

Chromium

Chrome Plating Hits Deep Spots, June 18 p 101
How Diffused Chromium Boosts Permeability, May 28 p 71

Chrysler Corp.:

Barracuda, Mustang Enter Sports Arena, by H. F. Jones, Apr 2 p 29
Chrysler Expands Canadian 'Trade,' by H. F. Jones, Mar 5 p 43
Data Culled from Assembly Lines for 'Instant' Quality Control, Apr 2 p 58
Plymouth and Dodge Unveil New Engines, by H. F. Jones, Feb 13 p 55
Portable System Furnishes Air for Mechanized Spotwelding, by R. R. Irving, Jan 9 p 52
Sealer Foams Into Tight Spots, June 25 p 85
Testing for 100% Reliability, by R. H. Eshelman, May 28 p 66

Cincinnati Milling Machine Co.:

Rotary Indexers Find New Slots, by R. H. Eshelman, Apr 23 p 71

Clad Metals

Aluminum's Boiling Pot of Ideas, by C. L. Kobrin, June 18 p 93
Carbide-Clad Tap Defies Wear, June 18 p 106
Coatings Go on Fast, Evenly With Electrophoresis, May 7 p 80
Plating Teams Up With Rolling to Clad Nickel onto Steel, by J. E. Sandford, May 28 p 63
Tough Ceramic and Metal Unite to Defy Heat and Corrosion, Jan 9 p 49

Clark Equipment Co.:

Old Lift Trucks Drop Profits, May 14 p 129

Cleaning & Finishing

Aluminum's Boiling Pot of Ideas, by C. L. Kobrin, June 18 p 93
Black Plate Passes Coating Test, Jan 16 p 72
Coatings Prevent Oxide Scale, Jan 23 p 54
'Energy Density': A New Concept for Efficient Metals Removal, May 28 p 74
Finishing Gets a New Tool: Free Abrasive Machining, Feb 13 p 88
Hand-Held Stylus 'Erases' Metal, Feb 13 p 90
Parts Gain Controlled Finish in Continuous Vibrator, by R. H. Eshelman, June 25 p 86
Primer Saves Finishing Steps on Reinforced Plastic, June 11 p 154
Ultrasonic Cleaning Works Six Ways, Jan 9 p 56
Ultrasonics Industry Looking to Climb onto Profit Curve, by K. W. Bennett, Jan 30 p 57

Cleveland Cliffs Iron Co.:

Pellet Boom Precipitates Heavy Equipment Spending Fallout, by T. M. Rohan, Apr 16 p 31

Clevite Corp.:

Aluminum Made Into Bearings by New Powder Process, by C. L. Kobrin, Apr 30 p 135

Coal & Coke

Coal Mining Unearths New Look, by T. M. Rohan, May 21 p 109

Coils

Black Plate Passes Coating Test, Jan 16 p 72
Coil Annealer Does Double Duty, Apr 23 p 98
Thin Foil Gets Heat Treatment in Feed-Through Furnace, by A. W. Young, June 25 p 80

Commercial Engineering & Sales Co.:

Flexible Drives Suppress Heat, by W. N. Redstreake, Apr 2 p 62

Computers, see Data Processing; Process Control

Construction

Adhesive 'Cold Bonds' Steel to Paper Honeycomb Core, by R. H. Lindbloom, Mar 19 p 84
Builders Led Steel Use in '63, June 11 p 114
Fabricator Sales Set for Takeoff, by K. W. Bennett, Apr 30 p 104
No End in Sight for Business Spending Boom, June 4 p 49
No Slowdown Due for Farwest Construction, by R. R. Kay, Jan 16 p 50
Opportunities Flow from Water Project, by R. R. Kay, Apr 16 p 42
Steel Structures Shed Weight, by L. S. Beedle, Feb 6 p 74
Tanks, Pipe Use More Reinforced Plastics, Feb 13 p 47

Containers

Aluminum's Boiling Pot of Ideas, by C. L. Kobrin, June 18 p 93
Can Market Battle Forces Basic Changes in Aluminum, Steel, by G. J. McManus, Mar 5 p 31
Farwest Canners Have Big Tinplate Appetite, by R. R. Kay, Apr 30 p 110

See also Aluminum; Packaging; Tinplate

Continental Screw Co.:

Raycarl Process: Its Impact on Cold-Headed Parts, by H. F. Phipard, June 4 p 61

Conventions

Electroplaters Stress Speed, Versatility, by J. E. Sanford, June 25 p 50
Experts Swap Tool Ideas, Apr 9 p 122
Meeting Probes Metals Mining and Uses, by James Beizer, Feb 27 p 43
1964 Meetings and Conventions, Jan 2 p 206
SAE Seeks Solution to Smog, by H. F. Jones, June 18 p 75
'Systems' Concept Gets Big Boost, June 11 p 67

See also Exhibitions

Coolants

Grinding Coolant Sheds Waste, Jan 30 p 95

Copper

Copper: More Ore and Talk About Prices, by James Beizer, May 28 p 33
How Strong Is Copper's Price Stability? Jan 16 p 103
Tailored Tests Upgrade Copper, by Paul Garatoni, Apr 23 p 92
Uncertainty Wracks Coppers Users; They Prepare for the Worst, Apr 23 p 55

Corning Glass Works Co.:

Adhesives Set Up New Products, by A. W. Young, Apr 30 p 127

Corrosion

Electrocoating Gains as Primer, by H. F. Jones, May 14 p 71
How Diffused Chromium Boosts Permeability, May 28 p 71
Plating Teams Up With Rolling to Clad Nickel onto Steel, by J. E. Sandford, May 28 p 63

Cresap, McCormick & Paget:

Wanted: Managers With Vision, Mar 12 p 119

Crest Ultrasonics Corp.:

Ultrasonic Cleaning Works Six Ways, Jan 9 p 56

Crucible Steel Co.:

Should Mills Stock Steel? Jan 23 p 87

Cutting

'Energy Density': A New Concept for Efficient Metal Removal, May 28 p 74
Hybrid Gas Cuts Cutting Costs, June 11 p 153
Plasma Arc Takes Thick Slices from Stainless Steel Plate, by F. R. Romeo, Jan 16 p 67

See also Machining; Tools, Cutting

D

DK Mfg. Co.:

Wire Cleans Up Weld Problems, June 4 p 71

Danly Machine Specialties, Inc.:

Press Line Switches Dies Quickly, May 7 p 83

Data Processing

Can Computers Cut Out 'Debugging' Period? By R. H. Eshelman, Feb 6 p 53
Computer Makers Eye Industrial Market, by K. W. Bennett, Feb 27 p 46
Computer Usse "Logic" to Direct Engineering, by P. J. Cathey, Mar 26 p 84
Data-Phone Cuts Purchase Time, Apr 30 p 215
Data System Guides Moldmaking, May 28 p 76
He Can Make the Difference Between Profit and Loss, by W. C. Hume, Jan 2 p 176
Is EDP Vital to Stock Control? May 21 p 197
Microfilms, EDP Combined in File, June 18 p 140
New Brain Has Big Memory, by W. N. Redstreake, Apr 16 p 35
RONS 'Stocks' Motors Quickly, Feb 20 p 159

Davidson, William R.:

What Modern Marketing Needs, Apr 9 p 81

Daystrom, Inc.:

X-Ray 'Mike' Reads Strip Thickness, Apr 9 p 103

Dayton Rogers Photo Mechanical Co.:

Photo-Etching Makes Tiny Parts with Hairline Accuracy, by A. F. Legun, Apr 16 p 70

Deere & Co.:

Staff Engineers Aid Line Men in Building Profits, by C. A. Davis, Mar 5 p 50

Defense

California Prepares for Spending Cuts, by R. R. Kay, Feb 13 p 56
California's Economy: Progress and Problems, by R. R. Kay, Mar 19 p 64
Pentagon Speeds up Its Tool Buying, by R. W. Crosby, May 7 p 45
Why California Must Diversify, by R. R. Kay, May 7 p 56
Will the Real Pentagon Source Please 'Fess Up'? By Eugene C. Beaudet, June 11 p 200
See Also, Purchasing, Government

Demag AG:

Tilting Furnaces Take Turns in Tandem Steelmaking, May 14 p 99

Design

Auto Designs Are Internationalized, by Jamse Beizer, Apr 16 p 36
Computer Cuts Corners in Turning, Mar 26 p 108
Computer Uses "Logic" to Direct Engineering, by P. J. Cathey, Mar 26 p 84
Computer Verifies Beam Design, by Lee Hall, May 7 p 76
Design Battle Highlights Race, by R. R. Kay, May 21 p 116
Design Engineers Need Help Now, by K. W. Bennett, May 21 p 106
Designers Trim Production Costs, by Clarifying Blueprints, by P. D. Prudden, Jan 16 p 74
How to Design Stiffening Ribs for Sheet-Metal Stampings, by Federico Strasser, Mar 19 p 90
IBM Has ADE Plan for Busy Engineers, Jan 16 p 41
Industrial Models: A 3-D Approach Puts Problems in Perspective, by G. J. McManus June 25 p 75
New Designs Needed for Autos, by H. F. Jones, Mar 19 p 63
Photo-Etching Makes Tiny Parts with Hairline Accuracy, by A. F. Legun, Apr 16 p 70
Plated Plastics Ride Design Wave, June 25 p 88
Steel Courts Autos With Ideas, by H. F. Jones, June 11 p 123
Value Analysis Is Design Step, May 28 p 88

Deutsch & Shea, Inc.:

Shifts Due in Hiring Engineers, Apr 30 p 115

DeVlieg Machine Co.:

Stiff Spindle Speeds Cutting, by R. H. Eshelman, June 25 p 78

Diamond Alkali Corp.:

Chrome Plating Hits Deep Spots, June 18 p 101

Dies

Die Shops Pressed for Press Time, by H. F. Jones, Mar 12 p 108
Die Stamps and Stacks in Sequence, by C. L. Kobrin, Feb 20 p 122
Plastic Checks Die Profiles, by M. K. Young, Feb 27 p 80
Quick-Change Dies for Drawing, Mar 5 p 75

Disamatic (Dansk Industri Syndicat):

Sand Castings Gain Precision With Flaskless Molds, May 7 p 78

Doehler Jarvis Co.:

Aluminum's Boiling Pot of Ideas, by C. L. Kobrin, June 18 p 93

Dofasco

Coil Annealer Does Double Duty, Apr 23 p 98

Dow Chemical Co.:

Auto Plastics Pick Up Speed, by H. F. Jones, Mar 12 p 113
Hybrid Gas Cuts Cutting Costs, June 11 p 153

Drafting Equipment

Automatic Drafting on Low-Cost Unit, Mar 12 p 148

Drave Corp.:

Low Grade Ore Enriched on Site, Feb 27 p 77

Drawing

Hard Alloys Drawn Without Scoring, Feb 20 p 130

Drever Co.:

'Alloys' Strengthen Plate Sales, by K. W. Bennett, Feb 20 p 90

Drewes Mfg. Co.:

Nine-in-One Tool Saves Time, Apr 16 p 72

Drilling

Fast Drilling of Malleable Iron, Mar 5 p 72
Fixture Speeds Up Fastener Job, Mar 26 p 107

Ductility

Brittle Metals Turn Ductile in Hydrodynamic Forming, May 28 p 68
Guidelines for Ductile Iron Stress Structure Control, May 14 p 96
Which Way to Form Sheet Metal? June 25 p 82

Dumping, See Foreign Trade

E. I. Du Pont de Nemours & Co., Inc.:

Film Package Speeds X-Raying of Heavy Metal Sections, Apr 30 p 138
How to Apply Explosive Forming, June 11 p 150

E

Earthmoving Equipment

Earthmovers Push Ahead in Sales, by K. W. Bennett, Feb 6 p 46

Eastman Kodak Co.:

Photo-Etching Makes Tiny Parts with Hairline Accuracy, by A. F. Legun, Apr 16 p 70

Editorials, see Campbell, Tom

Education

Is Technical Education Lagging? By R. H. Eshelman, Apr 16 p 43

See also Training Programs

Electric Storage Battery Co.:

How Important Is Profit-Making? Jan 9 p 37
Research Powers Battery Sales, by P. J. Cathey, Apr 23 p 62

Electrical Equipment

No End in Sight for Business Spending Boom, June 4 p 49
Research Powers Battery Sales, by P. J. Cathey, Apr 23 p 62

Electronic Devices & Controls

Air-to-Elcetronic Gaging System 'Mikes' Bores; Checks Tapers, May 28 p 72
Automatic System Logs Length of Sections in Hot Mill, Mar 26 p 104
Computer Cuts Corners in Turning, Mar 26 p 108
Cranes Move by Remote Control, Feb 6 p 78
Electronic Sales in Solid State, by K. E. Bennett, June 25 p 47
Electronic Touch Guides Coating in Automotive Prepaint Line, June 18 p 104
Line Gives Gears Fast Checkout, Feb 6 p 69
Machining Needs Shift Swiftly, by R. H. Eshelman, June 4 p 35
Milling With an Eye of Light, Mar 5 p 70
Pushing N/C for Peak Efficiency, Apr 23 p 96
Technology Goes Abroad by Rough Sales Route, by Richard Raddant, June 18 p 82

Electroplating

Abradable Coatings Resist Heat, Apr 30 p 137
Chrome Plating Hits Deep Spots, June 18 p 101
Coatings Go on Fast, Evenly With Electrophoresis, May 7 p 80
Conversion Coat Works Overtime, Apr 16 p 69
Electrocoating Gains as Primer, by H. F. Jones, May 14 p 71
Hand-Held Stylus 'Erases' Metal, Feb 13 p 90
Plastic Tightens Grip on Metal, Mar 26 p 100
Plated Plastics Ride Design Wave, June 25 p 83
Platers Put 'Dirt' to Work, by C. L. Kobrin, Feb 13 p 77
Platers Stress Speed, Versatility, by J. E. Sanford, June 25 p 50
Plating Teams Up With Rolling to Clad Nickel onto Steel, by J. E. Sandford, May 28 p 63
Zinc Plating Bath Avoids Cyanide, Jan 9 p 62

Elektrokemisk A/S of Oslo

Furnace Fires Ferroalloy Fight, by T. M. Rohan, Jan 23 p 26

Empire Reeves Co.:

Coil Annealer Does Double Duty, Apr 23 p 98

Employment, See Labor

Enamel Products & Plating Co.:

Black Plate Passes Coating Test, Jan 16 p 72

Engelhard Industries, Inc.:

Rolls Contour Tough Alloys, Apr 23 p 94

Engineers & Engineering

Computer Uses "Logic" to Direct Engineering, by P. J. Cathey, Mar 26 p 84
Design Engineers Need Help Now, by K. W. Bennett, May 21 p 106
Don't Brake Technical Progress, by R. H. Eshelman, Mar 26 p 81
Engineers Are Needed at the Top, Feb 13 p 61
He Can Make the Difference Between Profit and Loss, by W. C. Hume, Jan 2 p 176
IBM Has ADE Plan for Busy Engineers, Jan 16 p 41
It Takes Art to Put Payoff in Ideas, by Clifton A. Cobb, June 25 p 62
Microfilm, EDP Combined in File, June 18 p 140
Shifts Due in Hiring Engineers, Apr 30 p 115
Staff Engineers Aid Line Men in Building Profits, by C. A. Davis, Mar 5 p 50
'Systems' Concept Gets Big Boost, June 11 p 67
Why Engineers Should Succeed, June 4 p 47

Ensign-Brickford Co.:

How to Apply Explosive Forming, June 11 p 150

Europe

How Foreign Mills Look to U.S. Steelmakers—From the Inside, by G. J. McManus, Feb 20 p 85
Technology Goes Abroad by Rough Sales Route, by Richard Raddant, June 18 p 82
Will New Tariff Help ECSC? Feb 13 p 48

Europium

Ronson Offers Europium Compounds, Feb 20 p 159

Executives, See Labor; Recruiting Programs

Exhibitions

Can Maintenance Costs Be Cut? By T. M. Rohan, Feb 6 p 44
Exhibits Highlight New Ideas At ASME Design Show, Apr 30 p 145

Explosives

How to Apply Explosive Forming, June 11 p 150

Exports, See Foreign Trade

Export Processing Corp.:

Electronic Touch Guides Coating in Automotive Prepaint Line, June 18 p 104

Extrusion

Extrusion Forms Tungsten Tubes, Jan 16 p 78
Press Extrudes, Upsets, Pierces, May 21 p 144
Tubes Extruded Under Water, Jan 16 p 73

F

Fabrication

Cast Nylon Parts Resist Wear in Steel Mills and Presses, Jan 23 p 62
Challenge: Ways to Work Metals in Rigors of Outer Space, by R. H. Eshelman, Mar 19 p 79
Fighting Friction's Drag on Motion, by J. J. Obrzut, May 21 p 133
Hot Punch Shapes New Laminate, Apr 2 p 64
Hybrid Gas Cuts Cutting Costs, June 11 p 153
Logic: A New Partner for Forging, Feb 20 p 117
Photo-Etching Makes Tiny Parts with Hairline Accuracy, by A. F. Legun, Apr 16 p 70
Plasma Flame Blazes New Trails, by R. R. Irving, Mar 12 p 135
Rolls Contour Tough Alloys, Apr 23 p 94
Which Way to Form Sheet Metal? June 25 p 82
Wound Tubing: Novel Approach to Aluminum Fabrication, by R. R. Irving, May 7 p 73

Fafnir Bearing Co.:

Fighting Friction's Drag on Motion, by J. J. Obrzut, May 21 p 133
Teflon Fabric Lubricates Bearings, Feb 27 p 79

Fansteel Metallurgical Corp.:

Palladium Curbs Hydrogen Waste, May 7 p 86

Fasteners

Fastener Design Prevents Camout, Feb 6 p 76
Fasteners Keep Their Heads, June 11 p 156
Fasteners Latch on to Surging Markets, by T. M. Rohan, Feb 27 p 41
Fixture Speeds up Fastener Job, Mar 26 p 107
Raycarl Process: Its Impact on Cold-Headed Parts, by H. F. Phipard, June 4 p 61

Federated Department Stores, Inc.:

Leaders Must Shun 'People-Blindness', Jan 16 p 53

H. K. Ferguson Co.:

National Nails Down Casting Project, Mar 26 p 73

Ferroalloys

Furnace Fires Ferroalloys Fight, by T. M. Rohan, Jan 23 p 26

Filtors, Inc.:

How Diffused Chromium Boosts Permeability, May 28 p 71

Finance

Business Change: The Big Challenge Today, Tomorrow, by Eugene C. Beaudet, Jan 30 p 150
California Profits Measure Success, by R. R. Kay, Apr 23 p 68
Does Real Estate Limit Advances? Feb 20 p 103
Equipment Buying on Easy Terms, by R. H. Eshelman, June 4 p 45
How Business Views Inflation, May 28 p 49
How Important Is Profit-Making? Jan 9 p 37
How to Time Capital Spending, Feb 27 p 57
Is Capital Spending High Enough? By G. J. McManus, Jan 30 p 76
Metalworking Sales, Profits Score Big Gains, June 25 p 49
Steel Industry Financial Analysis, Apr 2 table following p 34
Steel Turns the Profit Corner, by R. D. Raddant, Feb 6 p 42

Firth Sterling, Inc.:

Hopkins Process Finds New Facets, Feb 6 p 72

Flood Damage

Industry Weathers Flood Damage, Mar 19 p 54

Foil

Thin Foil Gets Heat Treatment in Feed-Through Furnace, by A. W. Young, June 25 p 80

See also Tinplate

Ford Motor Co.:

Barracuda, Mustang Enter Sports Arena, by H. F. Jones, Apr 2 p 29
Daytona Test Feathers Comet's Nest, by H. F. Jones, Jan 16 p 49
Don't Brake Technical Progress, by R. H. Eshelman, Mar 26 p 81
Electroplating Gains as Primer, by H. F. Jones, May 14 p 71
Ford Frames Changes for '65 Models, by H. F. Jones, Feb 27 p 51
L-M Springs First Mid-'64 Autos, by H. F. Jones, Jan 30 p 69
Make Meetings Work for You, by Stanley Gillen, Jan 2 p 183
Total Quality Control Program Puts 'Dent' in Rework Costs, by W. N. Redstreake, Feb 20 p 124

Ford-Werke

Long, Short Runs Justified on Heavy-Duty Stamping Line, Feb 13 p 84

Forecasting

The Boom: Is It Really Beginning? By Eugene C. Beaudet, June 4 p 112
Can Machine Tool Sales Hit Peace-Time Peak? May 7 p 57
Demand Swings to Durables With a Rush, by R. D. Raddant, Mar 12 p 121
Distributors See Soft Spots With Order Gains, by Eugene C. Beaudet, Mar 26 p 69
Fabricator Sales Set for Takeoff, by K. W. Bennett, Apr 30 p 104
Fast Business Pace to Rule All Year, by J. D. Baxter, May 28 p 38
Fiscal Experts See Economic Boom, by R. W. Crosby, Feb 27 p 42
Industry Wants More New Machine Tools, by R. H. Eshelman, Jan 9 p 35
Kaiser Tells of Progress, Plans, by R. R. Kay, June 18 p 76
1964: One Way to Beat the Averages, by Eugene C. Beaudet, Jan 2 p 268
No End in Sight for Business Spending Boom, June 4 p 49
Record Business Year Is Forecast, by R. W. Crosby, Mar 19 p 58
64 'Starts Out on the Plus Side, by Eugene C. Beaudet, Jan 2 p 125
Soft Spots Give Lean Look to New Orders for Durables, by J. D. Baxter, Feb 13 p 43
Survey Predicts Gains for '64, Jan 9 p 83
Tax Reform Boosts Tools to Decade High, by R. H. Eshelman, Jan 30 p 73

Foreign Investments, See Foreign Trade

Foreign Trade

Action Due Soon on Tariff Changes, by R. W. Crosby, May 21 p 110
Can Exports Lessen Business Ills? by R. R. Kay, Apr 9 p 76
The Case Against Steel Imports, by Eugene C. Beaudet, May 28 p 34
Customers, Foreign Steel Spur Changes by Service Centers, by K. W. Bennett, Jan 16 p 37
Dumping Decision May Mark a Change, by G. J. McManus Apr 2 p 23
Dumping of Steel Is Global Problem, by G. J. McManus, Jan 2 p 128
East-West Trade: Myths vs Realities for Business, by Eugene C. Beaudet, Apr 9 p 168
Efficiency, Ability: Our Best Plusses for Export, by Eugene C. Beaudet, May 14 p 142
Foreign Market Research Demands Realistic Approach, by G. J. McManus, Feb 27 p 58
Is the Trend to Move Abroad? Jan 9 p 23
It's a Rear-Guard Action Against Tariff Cuts, Feb 13 p 63
Japan Stresses Quality in Drive to Capture More of Tool Market, by Eugene C. Beaudet, May 14 p 59
Japan's View About 'Dumping', by G. J. McManus, Apr 16 p 36
Metals Take Big Part in U.S. Moves Abroad, June 4 p 33
Mills Try to Plug Wire Crack in Tariff Dike, by G. J. McManus, Jan 30 p 59
New Markets, New Challenges Face U.S. in World Trade, May 7 p 60
The PA Can Aid Free World Trade, June 4 p 99
Parts Makers Protest Tariff Rebate Plan, by H. F. Jones, June 11 p 115
Profit Problems Get Tool Builders' Attention, by R. H. Eshelman, May 14 p 73
Revised Dumping Controls Draw Only Lukewarm Mill Reaction, Apr 30 p 97
Screw Machine Products Fight Sales Problems, by T. M. Rohan, Feb 20 p 92
Should U.S. Woo the Red Market? Apr 9 p 82
Steel Urges Treasury 'Revise Dumping Act', by R. W. Crosby, Jan 30 p 63
Technology Goes Abroad by Rough Sales Route, by Richard Raddant, June 18 p 82
What's So Wrong About Holding Up Our End? By Eugene C. Beaudet, Mar 12 p 200
What Worries World Executives, Jan 9 p 37
Will New Tariff Help ECSC? Feb 13 p 48
Will We Give Up Too Much, Too Soon? By Eugene C. Beaudet, Feb 13 p 130
World Steel Demand Is Rising, But Is Import Threat Receding? By G. J. McManus, May 21 p 103

Forgings

ECM Sculptures Complex Shapes in Tough Alloy Forgings, by A. W. Young, June 11 p 143
Logic: A New Partner for Forging, Feb 20 p 117

Foster-Wheeler Corp.:

The Peacetime Atom Blasts Away at Metalworking Barriers, by W. N. Redstreake, May 14 p 87

Foundry

Induction Furnaces Are Hot, by T. M. Rohan, Jan 16 p 42
Molds Harden in Own Heat, Apr 2 p 54

See also Casting, etc.

Foundry Industry

Foundry Business Has Golden Cast, by T. M. Rohan, Mar 5 p 35
Foundry Industry Gathers Momentum, May 7 p 48

Foxboro Co.:

Mass Spectrometer Checks Welds, Jan 30 p 98

Freight

Railroads Gain Speed in Drive for Bulk Transport Market, by K. W. Bennett, June 4 p 29
Seaway Steams to Record in 5th Year, Jan 9 p 27

Fremont Foundry:

Rotating Combs Size Materials, Feb 6 p 79

Fuels

Hybrid Gas Cuts Cutting Costs, June 11 p 153
SAE Seeks Solution to Smog, by H. F. Jones, June 18 p 75

Fuji Iron & Steel Co.:

How High Top Pressure Affects Blast Furnace Performance, May 7 p 84
Improved Submerged-Arc Welding Raises Speed and Toughness, Apr 16 p 59

Fuken Industrial Co.:

Coatings Prevent Oxide Scale, Jan 23 p 54

Furnaces

Furnace Equipment Sales Warm Up, by K. W. Bennett, June 11 p 116
Furnace Fires Ferroalloy Fight, by T. M. Rohan, Jan 23 p 26

Furnaces, Blast

Feeding a Hungry Blast Furnace, June 11 p 148
How High Top Pressure Affects Blast Furnace Performance, May 7 p 84
Pellet Boom Precipitates Heavy Equipment Spending Fallout, by T. M. Rohan, Apr 16 p 31

Furnaces, Electric

Induction Furnaces Are Hot, by T. M. Rohan, Jan 16 p 42

Furnaces, Heat Treating

Castings Shed Stresses in Argon Furnaces, Mar 5 p 78
Coil Annealer Does Double Duty, Apr 23 p 98
Thin Foil Gets Heat Treatment in Feed—Through Furnace, by A. W. Young, June 25 p 80

Furnaces, Openhearth

Openhearth Model Predicts Effects of Changes in Melting Bath, Mar 12 p 140

Furnaces, Vacuum

Programmer Runs Vacuum Melting, Jan 16 p 80

G

Gages, see Instruments

Gardner-Denver Co.:

Air Takes a Trolley to Work, May 21 p 143

Gas

Helium Markets Are Expanding, by James Beizer, June 18 p 65
Hybrid Gas Cuts Cutting Costs, June 11 p 153

Gears

Gear Sales Shift Toward New Highs, by B. K. Swenson, June 11 p 118
Line Gives Gears Fast Checkout, Feb 6 p 69

General Electric Co.:

Adhesives Set Up New Products, by A. W. Young, Apr 30 p 127
Brittle Metals Turn Ductile in Hydrodynamic Forming, May 28 p 68
Equipment Buying on Easy Terms, by R. H. Eshelman, June 4 p 45
Field Trips Pay Off in Quality, by T. M. Rohan, June 25 p 48
Fighting Friction's Drag on Motion, by J. J. Obrzut, May 21 p 133
GE Offers Low-Cost N/C Unit, Jan 23 p 37
How to Prevent Tool Cracking, May 21 p 141
Technology Goes Abroad by Rough Sales Route, by Richard Raddant, June 18 p 82
Tracer Triples Nozzle Output, Jan 23 p 61
Welding Rides on a Carousel, Jan 16 p 70
Welds in Rene 62 Resist Cracking, Jan 16 p 77
Who'll Tame Information Flood? Jan 16 p 53
X-Ray Unit Speeds Scrap Analysis, Apr 23 p 59

General Foods Corp.:

Why Marketing Managers Fail, Apr 30 p 115

General Magnaplate Co.:

Film Package Speeds X-Raying of Heavy Metal Sections, Apr 30 p 138
Teflon Seals Aluminum Hardcoat, by J. E. Sanford, Mar 19 p 82

General Motors Corp.:

Air-to-Electronic Gaging System 'Mikes' Bores; Checks Tapers, May 28 p 72
Can It Be That Nothing Fails Like Success? By Eugene C. Beaudet, Feb 6 p 120
Fighting Friction's Drag on Motion, by J. J. Obrzut, May 21 p 133
GM Bets Another $2 Billion, by H. F. Jones, Mar 26 p 79
GM Stylists Raise the Roof, by H. F. Jones, Feb 6 p 51
GM's Test Program Proves Out, by H. F. Jones, May 21 p 115
GMC to Field Widest Medium Diesel Line, by H. F. Jones, Jan 9 p 31
Line Gives Gears Fast Checkout, Feb 6 p 69
Parts Gain Controlled Finish in Continuous Vibrator, by R. H. Eshelman, June 25 p 86
Retreat from Boredom Pays Off, by H. F. Jones, Jan 16 p 54
Value Analysis Is Design Step, May 28 p 88
Workers React to Responsibility, by H. F. Jones, Apr 23 p 74

General Telephone & Electronics Corp.:

Don't Conduct R&D in a Vacuum, June 18 p 81

Gerber Scientific Instrument Co.:

Automatic Drafting on Low-Cost Unit, Mar 12 p 148

Giannini Scientific Corp.:

Plasma Flame Blazes New Trails, by R. R. Irving, Mar 12 p 135

Giddings & Lewis Machine Tool Co.:

N/C Boomed for Job Shop Runs, Mar 12 p 117

Golding Manufacturing Co.:

Fixture Speeds Up Fastener Job, Mar 26 p 107

Government

After All, Whose Job Is It to Create Jobs? By Eugene C. Beaudet, Jan 16 p 114
Antitrust Rulings Block Growth, by J. D. Baxter, Mar 12 p 106
Budget Needs Support of Business, by R. W. Crosby, Jan 30 p 62
Consumer Protection Hits All Industries, by R. W. Crosby, Feb 13 p 49
Gov't & Business: What Better Time to Solve Issues? By Eugene C. Beaudet, May 28 p 100
Government and R&D: Is Honeymoon Over? By R. W. Crosby, Mar 12 p 105
Industry Faces Tough Battles, by R. W. Crosby, Jan 2 p 127
Industry Fights Price 'Guidance,' by R. W. Crosby, Feb 20 p 87
Price Indictments Plague Steel, Apr 16 p 34
Projects Gets Workers Interested in Politics, by R. R. Kay, Feb 6 p 52
Trust Busters Take Initiative in Seeking Violations, by R. W. Crosby, Jan 9 p 21
U.S. Snipes at Business Privacy, by R. W. Crosby, Mar 5 p 34
Washington, by R. W. Crosby, page 11 all issues
What the President Wants, Jan 16 p 40
Will Industry Join the War on Poverty? By R. W. Crosby, Jan 16 p 40
Will New Rules Change Merger Pattern? June 4 p 31
Will the Real Pentagon Source Please 'Fess Up'? By Eugene C. Beaudet, June 11 p 200

W. R. Grace & Co.:

Approval Seen for Smog Control Units, by R. R. Kay, Mar 5 p 44

Greenback Industries, Inc.:

Fighting Friction's Drag on Motion, by J. J. Obrzut, May 21 p 133

W. T. Grimm & Co.:

Bargains Gone in Merger Market, by K. W. Bennett, Feb 13 p 50

Grinding

Abrasive Machining Goes Big, by R. H. Eshelman, Feb 27 p 55
Abrasive Machining: The Big Bite of Tiny Grains, by R. H. Eshelman, Apr 9 p 93
Grinding Coolant Sheds Waste, Jan 30 p 95

Groov-Pin Corp.:

Fixture Speeds Up Fastener Job, Mar 26 p 107

Growth, See Industrial Expansion

Grumman Aircraft Co.:

Laser Welding: Set for Action, Jan 23 p 64

Gurnard Mfg. Co.:

Pneumatic N/C Machine Tools Put Job Shop 'In the Chips', by W. N. Redstreake, Apr 16 p 62

H

Haber, Dr. William:

Human Adjustment to Automation Studied, by R. H. Eshelman, Feb 20 p 101

Haddon Tool & Mfg. Co.:

Die Stamps and Stacks in Sequence, by C. L. Kobrin, Feb 20 p 122

Hamilton Watch Co.:

Thin Foil Gets Heat Treatment in Feed-Through Furnace, by A. W. Young, June 25 p 80

Handy & Harman Co.:

Soft Solder Joins Tube to Plate, June 18 p 103

Hanna Mining Co.:

Low Grade Ore Enriched on Site, Feb 27 p 77
Pellet Boom Precipitates Heavy Equipment Spending Fallout, by T. M. Rohan, Apr 16 p 31

Hanson-Van Winkle-Munning Co.:

Zinc Plating Bath Avoids Cyanide, Jan 9 p 62

Harmon & Co.:

Steel Gains 'Protective Blanket' During Heat Treating Cycle, June 11 p 146

Heald Machine Co.:

Tracer Triples Nozzle Output, Jan 23 p 61

Heat Treating

'Alloys' Strengthen Plate Sales by K. W. Bennett, Feb 20 p 90
Coil Annealer Does Double Duty, Apr 23 p 98
Steel Gains 'Protective Blanket' During Heat Treating Cycle, June 11 p 146
Thin Foil Gets Heat Treatment in Feed-Through Furnace, by A. W. Young, June 25 p 80

Heating & Heating Equipment

Furnace Equipment Sales Warm Up, by K. W. Bennett, June 11 p 116
Heating Future Has Healthy Glow, by K. W. Bennett, Mar 5 p 38
Quality Sights Raised to Meet New Demands, by Vincent Betko, Apr 30 p 116

Hewitt-Robins, Inc.:

Swift, Deliberate Action Smooths Merger Moves, by Austin Goodyear, May 28 p 50

High Voltage Engineering Corp.:

The Peacetime Atom Blasts Away at Metalworking Barriers, by W. N. Redstreake, May 14 p 87

Hoffman Industries, Inc.:

Grinding Collant Sheds Waste, Jan 30 p 95

Hooker Chemical Corp.:

Conversion Coat Works Overtime, Apr 16 p 69

Hotpoint Co.:

Meeting Daily Is *Not* Too Often, by Marshall Payne, Jan 2 p 172

Howe Sound So.:

Castings Shed Stresses in Argon Furnaces, Mar 5 p 78
Siphon Transfers Molten Aluminum, Mar 5 p 68

Hughes Aircraft Co.:

N/C Tackles Shorter Work Runs, Jan 30 p 97

Human Resources Conference

Why Industry Fails in Politics, Feb 6 p 55

Hydramatic Div., See General Motors Corp.

I

IHI (Ishikawajima Harima Heavy Industries):

'Enriched' Steels Show New Pep, by C. L. Kobrin, Jan 9 p 54

IIT Research Institute

How Long Until 'Full' Automation? By R. H. Eshelman, Apr 9 p 79
X-Ray Unit Made Pocket Size, Jan 9 p 60

I-T-E Circuit Breaker Co.:

Computer Uses "Logic" to Direct Engineering, by P. J. Cathey, Mar 26 p 84
IBM Has ADE Plan for Busy Engineers, Jan 16 p 41

Illinois Tool Works, Inc.:

Line Gives Gears Fast Checkout, Feb 6 p 69

Imports, See Foreign Trade

Industrial Expansion

All-Out Push to Land Industry, by R. R. Kay, June 11 p 124
Aluminum's Boiling Pot of Ideas, by C. L. Kobrin, June 18 p 93
Antitrust Rulings Block Growth, by J. D. Baxter, Mar 12 p 106
Appliance Makers Boost Capital Outlays; Shoot for Record Year, by K. W. Bennett, Mar 12 p 101
The Boom: Is It Really Beginning? By Eugene C. Beaudet, June 4 p 112
California's Blueprint for the Future, by R. R. Kay, Mar 26 p 80
California's Economy: Progress and Problems, by R. R. Kay, Mar 19 p 64
Demand Swings to Durables With a Rush, by R. D. Raddant, Mar 12 p 121
GM Bets Another $2 Billion, by H. F. Jones, Mar 26 p 79
Golden Year Ahead for Farwest Metals, by R. R. Kay, Jan 2 p 138
Helium Markets Are Expanding, by James Beizer, June 18 p 65
Hitching Ride on R&D Fallout Is Way to Spur Growth, by R. H. Eshelman, Feb 6 p 56
How to Time Capital Spending, Feb 27 p 57
Is Steel Capital Spending High Enough? By G. J. McManus, Jan 30 p 76
Job Problems: Plain Facts and Blind Alleys, by Eugene C. Beaudet, Feb 27 p 122
Kaiser Tells of Progress, Plans, by R. R. Kay, June 18 p 76
L-P Tank Sales Expanding Again, by K. W. Bennett, Apr 16 p 38
Magnesium Capacity Due for Boost, by K. W. Bennett, Jan 9 p 26
Metalworking Sales, Profits Score Big Gains, June 25 p 49
Mills Look to Expanding Future, by G. J. McManus, Mar 19 p 56
No End in Sight for Business Spending Boom, June 4 p 49
Planning Speeds Business Growth, by R. R. Kay, Jan 30 p 70
Questions, But Not All the Answers to Growth Puzzle, by Eugene C. Beaudet, Jan 9 p 92
Service Centers Launch Big Spending Program, Mar 12 p 105
Tax Cuts: Can the Economy Keep Cool? By Eugene C. Beaudet, Mar 5 p 116
What's Keeping the Northwest Strong? By R. R. Kay, June 25 p 56
Why California Must Diversify, by R. R. Kay, May 7 p 56

Industrial Relations

Common Goal Welds Team Effort, by Lester G. Porter, Jan 2 p 158
Does Industry Want Conformists? June 11 p 129
Field Trips Pay Off in Quality, by T. M. Rohan, June 25 p 48
How to Get Through to People, Jan 2 p 157
How Industry Views Integration, by G. J. McManus, Feb 27 p 44
How White-Collar Workers Feel, May 21 p 121
Human Adjustment to Automation Studied, by R. H. Eshelman, Feb 20 p 101
Individual 'Values' Hold the Key, by Dr. Robert McMurry, Jan 2 p 179
Industry, Labor Take Stitch-in-Time Tack in Contract Negotiations, by R. W. Crosby, Apr 9 p 63
Information Must Flow Two Ways, June 18 p 81

Industrial Relations

Leaders Must Shun 'People-Blindness', Jan 16 p 53
Make Meetings Work for You, by Stanley Gillen, Jan 2 p 183
Modern Personnel Man Can Get Management's Message Through, by Walter H. Powell, Jan 2 p 186
A New Era of Not-So-Bad Feeling? By Eugene C. Beaudet, Mar 19 p 134
PA Stresses Human Relations, Apr 16 p 103
Project Gets Workers Interested in Politics, by R. R. Kay, Feb 6 p 52
Retreat from Boredom Pays Off, by H. F. Jones, Jan 16 p 54
There's More to Kaiser Plan Payoff Than Cash to Workers, by G. J. McManus, Mar 19 p 51
Travel Indirect Path to Results, by Stanley C. Pace, Jan 2 p 162
To Uncover Problem Managers Reach Men Who Work for Them, by George R. Desi, Jan 2 p 169
Unions Put More 'Give' into Give-and-Take Bargaining, Mar 19 p 69
A Well Planned Program Can Carry the Message, by E. F. Foubert, Jan 2 p 165
When Harmony Has Little Value, June 25 p 61
Where Management Needs Help, Jan 30 p 75
Why Industry Fails in Politics, Feb 6 p 55
Workers Are Urged to Be More Flexible, Mar 19 p 55
Workers React to Responsibility, by H. F. Jones, Apr 23 p 74

See also Labor, Management

Industrial Relations Institute

Engineers Are Needed at the Top, Feb 13 p 61

Ingersoll Milling Machine Co.:

EDM Tailors Tooling Precisely, by M. I. Ross, June 4 p 72

Instruments

Air Gages 'Pull In' Tolerances, by Robert Johnston, Feb 13 p 80
Automatic Drafting on Low-Cost Unit, Mar 12 p 148
Gage Reads Width of Hot Strip, Apr 2 p 61
Hot Targets Flash Flaws Patterns, by W. N. Redstreake, Mar 5 p 65
Machining to Tool Room Specs, Feb 27 p 82
Mass Spectrometer Checks Welds, Jan 30 p 98
Measuring Strain at 7000 deg. F, Mar 19 p 89
Metal Fracture: How and Why? Apr 16 p 66
No End in Sight for Business Spending Boom, June 4 p 49
Novel Height Gage Speeds Checking, Mar 5 p 74
Optical 'Mike' Gages Hot Wire, Feb 20 p 121
The Peacetime Atom Blasts Away at Metalworking Barriers, by W. N. Redstreake, May 14 p 87
Putting New Teeth in Inspection, by W. N. Redstreake, Feb 27 p 69
'Radar Waves' Bounce to Gage Thickness, June 4 p 74
Steelmen Extend Nuclear Gaging, Mar 12 p 144
Tailored Tests Upgrade Copper, by Paul Garatoni, Apr 23 p 92
X-Ray 'Mike' Reads Strip Thickness, Apr 9 p 103
X-Rays Record Coating Weihgts, Apr 16 p 64

See also Electronic Devices & Controls

Interlake Iron Co.:

Furnace Fires Ferroalloy Fight, by T. M. Rohan, Jan 23 p 26

International Business Machine Co.:

Data-Phone Cuts Purchase Time, Apr 30 p 215
He Can Make the Difference Between Profit and Loss, by W. C. Hume, Jan 2 p 176
IBM Has ADE Plan for Busy Engineers, Jan 16 p 41
New Brain Has Big Memory, by W. N. Redstreake, Apr 16 p 35

International Harvester Co.:

Diversification Pays Off for IH, by H. F. Jones, June 4 p 41

International Nickel Co. of Canada:

Nickel Finds New Uses, New Growth, by J. D. Baxter, Jan 23 p 40
Plating Teams Up With Rolling to Clad Nickel onto Steel, by J. E. Sandford, May 28 p 63

International Resistance Co.:

Modern Personnel Man Can Get Management's Message Through, by Walter H. Powell, Jan 2 p 186

Inventories

First Word Is Out on Auto Steel Dip, by H. F. Jones, Mar 5 p 33
Inventory Turnaround Due by May, Feb 13 p 45
Is EDP Vital to Stock Control? May 21 p 197
PAs Note Sharp Inventory Gains, Apr 9 p 159
Should Mills Stock Steel? Jan 23 p 87

Ion Physic Corp.:

The Peacetime Atom Blasts Away at Metalworking Barriers, by W. N. Redstreake, May 14 p 87

Italsider

Feeding a Hungry Blast Furnace, June 11 p 148

J

Japan

Can Exports Lessen Business Ills? By R. R. Kay, Apr 9 p 76
Japan Stresses Quality in Drive to Capture More of Tool Market, by Eugene C. Beaudet, May 14 p 59
Japan's View About 'Dumping', by G. J. McManus, Apr 16 p 36
Japanese Offered Iron Ore Deal, by R. R. Kay, Feb 20 p 98

Jarrell Ash Co.:

Microscope Televises Nonmetallic Flaws, May 14 p 93

Jigs, Fixtures

Carbide-Clad Tap Defies Wear, June 18 p 106
Fixture Speeds Up Fastener Job, Mar 26 p 107

Joining

Sealer Foams Into Tight Spots, June 25 p 84
Soft Solder Joins Tube to Plate, June 18 p 103

See also Adhesives; Bonding

Jones & Laughlin Steel Corp.:

Abrasive Machining: The Big Bite of Tiny Grains, by R. H. Eshelman, Apr 9 p 93
Automatic System Logs Length of Sections in Hot Mill, Mar 26 p 104
Black Plate Passes Coating Test, Jan 16 p 72
Openhearth Model Predicts Effects of Changes in Melting, Bath, Mar 12 p 140

K

Kaiser Aluminum Corp.:

Aluminum's Boiling Pot of Ideas, by C. L. Kobrin, June 18 p 93

Kaiser Steel Corp.:

Huge Steel Iceberg to Seek Oil, by R. R. Kay, June 4 p 42
Japanese Offered Iron Ore Deal, by R. R. Kay, Feb 20 p 98
Kaiser Tells of Progress, Plans, by R. R. Kay, June 18 p 76
There's More to Kaiser Plan Payoff Than Cash to Workers, by G. J. McManus, Mar 19 p 51
X-Ray 'Mike' Reads Strip Thickness, Apr 9 p 103

Kameari Foundry, Hitachi Ltd.:

Molds Harden in Own Heat, Apr 2 p 54

Kearney & Trecker Corp.:

N/C Boomed for Job Shop Runs, Mar 12 p 117

Kelly Girl Service:

Rented Brains Solve Technical Problems, by J. M. Still, Jr. Jan 16 p 44

Kennametal Inc.:

Nine-in-One Saves Time, Apr 16 p 72

H. Kloff & Co.:

X-Ray Unit Speeds Scrap Analysis, Apr 23 p 59

Klein Institute for Aptitude Testing, Inc.:

Urgent Need: Understudy Executives, June 4 p 47

Koehring Co.:

Press Makers May Stamp Out Old Record and Form New One this Year, by K. W. Bennett, Mar 26 p 67

Koppers Co.:

Foreign Market Research Demands Realistic Approach, by G. J. McManus, Feb 27 p 58

Kutztown Foundry & Machine Corp.:

Data System Guides Moldmaking, May 28 p 76

L

Labor

Can UAW Settle Without Strike? By H. F. Jones, Jan 2 p 129
Industry, Labor Take Stitch-in-Time Tack in Contract Negotiations, by R. W. Crosby, Apr 9 p 63
Job Problems: Plain Facts and Blind Alleys, by Eugene C. Beaudet, Feb 27 p 122
Jobless Rate Calls for Action, Jan 23 p 30
Mixed News in Job Trend Survey, by R. W. Crosby, Apr 23 p 58
Project Gets Workers Interested in Politics, by R. R. Kay, Feb 6 p 52
Rail Pact Heralds New Labor Peace, Apr 30 p 99
Strike Idleness Down Fourth Year in Row, Jan 9 p 25
UAW Goes After Big Package as Automakers Have Big Year, by H. F. Jones, May 28 p 31
UAW Is Aiming for Big Slice of Auto Industry Profit Pie, by H. F. Jones, Feb 6 p 39
UAW Leaves Door Wide Open for Anything—as Long as It's 'More', by H. F. Jones, Apr 2 p 21
Unions Put More 'Give' into Give-and-Take Bargaining, Mar 19 p 69
Will Industry Join the War on Poverty? By R. W. Crosby, Jan 16 p 40

Labor, Fringe Benefits

Business Won't Take Summer Vacation, by T. M. Rohan, June 25 p 46
Profit Dip Hurts AM Progress Sharing, by H. F. Jones, June 18 p 70
There's More to Kaiser Plan Payoff Than Cash to Workers, by G. J. McManus, Mar 19 p 51
Vacation Policies Grow More Liberal, June 25 p 61
Vacation Policy Grows More Liberal, Mar 5 p 49

Labor, Temporary

Rented Brains Solve Technical Problems, by J. M. Still, Jr., Jan 16 p 44

Labor, Wages

Guidelines: Who's Breaking Them This Time? By Eugene C. Beaudet, Apr 23 p 136

Labor Law

Unions Can Be Sued by Unhappy Workers, Jan 16 p 43

LaSalle Steel Co.:

Tellurium Helps Bars Shed Chips, Apr 9 104

Latrobe Steel Co.:

Hot Metal, Vacuum Produce Huge Heats, by G. J. McManus, May 28 p 37

Lead

Aluminum Shines, Lead Dulls in Washington, by R. R. Kay, Apr 2 p 30
Demand Brings Another Increase in Lead Price, Jan 9 p 81

Lee Wilson Engineering Co.:

Coil Annealer Does Double Duty, Apr 23 p 98

Legislation

Action Due Soon on Tariff Changes, by R. W. Crosby, May 21 p 110
Chances Fade for New Stockpile Law, by James Beizer, June 4 p 34
Coming—Dumping Law Overhaul, by G. J. McManus, Mar 26 p 71
Congress May Act on State Taxes, by R. W. Crosby, June 18 p 63
Congress Seeks Ways to End Chaos and Waste in R&D, by R. W. Crosby, Apr 2 p 24
Consumer Protection Hits All Industries, by R. W. Crosby, Feb 13 p 49
Industry Faces Tough Battles, by R. W. Crosby, Jan 2 p 127
Mesabi Future Hangs on Fall Referendum, by T. M. Rohan, Jan 23 p 27
Revised Dumping Controls Draw Only Lukewarm Mill Reaction, Apr 30 p 97
Steel Urges Treasury 'Revise Dumping Act', by R. W. Crosby, Jan 30 p 63
Will New Rules Change Merger Pattern? June 4 p 31

LeMaire Machine Tool Co.:

N/C Blends With Transfer Lines, by R. H. Eshelman, Mar 19 p 65

LeTourneau-Westinghouse Co., See Westinghouse Air Brake Co.:

Ling-Temco Vought Corp.:

Which Way to Form Sheet Metal? June 25 p 82

Arthur D. Little, Inc.:

When to Use Plastic Rotational Molding, Jan 30 p 100

Lockheed Aircraft Corp.:

A-11 Sets Pace in Mach Race, Mar 12 p 114

Loctite Corp.:

Adhesives Set Up New Products, by A. W. Young, Apr 30 p 127

Loftus Engineering Corp.:

Direct Casting, Vacuum Degassing Score Gains, by G. J. McManus, Feb 6 43

Loma Machine Mfg. Co.:

Tubes Extruded Under Water, Jan 16 p 73

Lorco Div., See Wheelabrator Corp.

Lubrication

Engineers Put Friction to Rout via New Lubrication Concept, by J. E. Sandford, Jan 23 p 51
Fast Drilling of Malleable Iron, Mar 5 p 72
Fighting Friction's Drag on Motion, by J. J. Obrzut, May 21 p 133
Hard Alloys Drawn Without Scoring, Feb 20 p 130
Teflon Fabric Lubricates Bearings, Feb 27 p 79

Luria Bros. & Co., Inc.:

Scrap and Sinter: New Bedfellows, Mar 26 p 97

M

Machinability

Aluminum's Boiling Pot of Ideas, by C. L. Kobrin, June 18 p 93
Hopkins Process Finds New Facets, Feb 6 p 72
How Diffused Chromium Boosts Permeability, May 27 p 71
Tellurium Helps Bars Shed Chips, Apr 9 p 104

Machine Tool Industry

Automakers Give Tool Orders Sharp Boost, by R. H. Eshleman, May 28 p 47
Being Modern Takes More Than Money, Feb 20 p 89
Can Machine Tool Sales Hit Peace-Time Peak? May 7 p 57
Demand Swings to Durables With a Rush, by R. D. Raddant, Mar 12 p 121
Europeans Impressed by U.S. T&D Industry, by James Beizer, May 14 p 61
Experts Swap Tool Ideas, Apr 9 p 122
Industry Wants More New Machine Tools, by R. H. Eshelman, Jan 9 p 35
New Tool Orders Soared in January, by R. H. Eshelman, Mar 5 p 47
No End in Sight for Business Spending Boom, June 4 p 49
Profit Problems Get Tool Builders' Attention, by R. H. Eshelman, May 14 p 73
Tax Reform Boosts Tools to Decade High, by R. H. Eshelman, Jan 30 p 73
Toolmen Look Toward Billion Dollar '64, by R. H. Eshelman, Jan 2 p 141

Machine Tools

Backlogs Indicate Real Strength, Apr 2 p 31
Hitting the Numbers Pays Off, by H. F. Jones, Apr 30 p 102
Japan Stresses Quality in Drive to Capture More of Tool Market, by Eugene C. Beaudet, May 14 p 59
Metal Industries Step Up Automation Trend, by R. H. Eshelman, May 21 p 119
N/C Blends With Transfer Lines, by R. H. Eshelman, May 19 p 65
N/C Boomed for Job Shop Runs, Mar 12 p 117
N/C Course for Builders, Buyers, Jan 16 p 51
N/C Tackles Shorter Work Runs, Jan 30 p 97
New N/C Concept Cuts Parts Down to Size, by R. H. Eshelman, Feb 13 p 59
Pentagon Speeds up Its Tool Buying, by R. W. Crosby, May 7 p 45
Pneumatic N/C Machine Tools Put Job Shop 'In the Chips', by W. N. Redstreake, Apr 16 p 62
Pre-Set Tools Cut Downtime, by R. H. Eshelman, Apr 30 p 113
Rotary Indexers Find New Slots, by R. H. Eshelman, Apr 23 p 71
Soft Spots Give Lean Look to New Orders for Durables, by J. D. Baxter, Feb 13 p 43

Machine Tools, Boring

Stiff Spindle Speeds Cutting, by R. H. Eshelman, June 25 p 78
Tracer Triples Nozzle Output, Jan 23 p 61

Machine Tools, Grinding

Abrasive Machining Goes Big, by R. H. Eshleman, Feb 27 p 55
Finishing Gets a New Tool: Free Abrasive Machining, Feb 13 p 88
Flexible Drives Suppress Heat, by W. N. Redstreake, Apr 2 p 62
Modular Grinder Is Tailored to Its Tasks, by R. H. Eshleman, June 11 p 127

Machine Tools, Lathe

Computer Cuts Corners in Turning, Mar 26 p 108
GE Offers Low-Cost N/C Unit, Jan 23 p 37
Machining to Tool Room Specs, Feb 27 p 82

Machine Tools, Milling

EDM Tailors Tooling Precisely, by M. I. Ross, June 4 p 72
Milling With an Eye of Light, Mar 5 p 70

Machinery

Raycarl Process: Its Impact on Cold-Headed Parts, by H. F. Phipard, June 4 p 61
Rotating Combs Size Materials, Feb 6 p 79

Machinery, Agricultural

Diversification Pays Off for IH, by H. F. Jones, June 4 p 41
Farm Equipment Sales Expected to Top Bumper '64 Next Year, by K. W. Bennett, May 21 p 107
New Markets, New Challenges Face U.S. in World Trade, May 7 p 60

Machinery, Earthmoving

Tests Insure Sound Castings, Feb 20 p 128

Machinery, Presses

Long, Short Runs Justified on Heavy-Duty Stamping Line, Feb 13 p 84
Press Centers Red Hot Billets, Jan 23 p 60
Press Extrudes, Upsets, Pierces, May 21 p 144
Press Line Switches Dies Quickly, May 7 p 83
Press Makers May Stamp Out Old Record and Form New One this Year, by K. W. Bennett, Mar 26 p 67
Thermosets Take Shape Quickly in 'Injection' Molding Unit, Jan 9 p 58
Tubes Extruded Under Water, Jan 16 p 73
Versatility Is Star of Press Showroom, by R. H. Eshelman, June 18 p 79

Machinery & Allied Products Institute

How to Time Capital Spending, Feb 27 p 57

Machinery Industry

No End in Sight for Business Spending Boom, June 4 p 49

Machining

Abrasive Machining: The Big Bite of Tiny Grains, by R. H. Eshelman, Apr 9 p 93
Air Gages 'Pull In' Tolerances, by Robert Johnston, Feb 13 p 80
Computer Cuts Corners in Turning, Mar 26 p 108
ECM Sculptures Complex Shapes in Tough Alloy Forgings, by A. W. Young, June 11 p 143
EDM Tailors Tooling Precisely, by M. I. Ross, June 4 p 72
'Energy Density': A New Concept for Efficient Metal Removal, May 28 p 74
Fast Drilling of Malleable Iron, Mar 5 p 72
Finishing Gets a New Tool: Free Abrasive Machining, Feb 13 p 88
How to Apply Explosive Forming, June 11 p 150
Machining Needs Shift Swiftly, by R. H. Eshelman, June 4 p 35
Machining to Tool Room Specs, Feb 27 p 82
N/C Tackles Shorter Work Runs, Jan 30 p 97
New N/C Concept Cuts Parts Down to Size, by R. H. Eshelman, Feb 13 p 59
Nine-in-One Tools Saves Time, Apr 16 p 72
Pushing N/C for Peak Efficiency, Apr 23 p 96
Tomorrow's Machining Already Taking Shape, by R. H. Eshelman, June 25 p 59
Tough Ceramic and Metal Unite to Defy Heat and Corrosion, Jan 9 p 49

Maerz Ofenbau AG:

Tilting Furnaces Take Turns in Tandem Steelmaking, May 14 p 99

Magnaflux Corp.:

'Sounding Out' Cast Structure, May 21 p 146
Tailored Tests Upgrade Copper, by Paul Garatoni, Apr 23 p 92

Magnesium

Magnesium Capacity Is Due for Boost, by K. W. Bennett, Jan 9 p 26

Maichle & Wytmar, Inc.:

Who Is Ready for the Top Spot? May 28 p 49

Maintenance

Can Maintenance Costs Be Cut? By T. M. Rohan, Feb 6 p 44
Carbide-Clad Tap Defies Wear, June 18 p 106
Challenge: Ways to Work Metals in Rigors of Outer Space, by R. H. Eshelman, Mar 19 p 79
Fighting Friction's Drag on Motion, by J. J. Obrzut, May 21 p 133
How to Prevent Tool Cracking, May 21 p 141
Portable System Furnishes Air for Mechanized Spotwelding, by R. R. Irving, Jan 9 p 52
Welds in Rene 62 Resist Cracking, Jan 16 p 77

D. E. Makepeace, See Engelhard Industries, Inc.

Management

After All, Whose Job Is It to Create Jobs? By Eugene C. Beaudet, Jan 16 p 114
Applying New Drive to Managing, May 14 p 75
Bargains Gone in Merger Market, by K. W. Bennett, Feb 13 p 50
Being Modern Takes More Than Money, Feb 20 p 89
Choosing Controls: Better Right Than Tight, by Carter C. Higgins, June 11 p 130
Does Industry Want Conformists? June 11 p 129
Efficiency, Ability: Our Best Plusses for Export, by Eugene C. Beaudet, May 14 p 142
Financial Management Isn't Easy, Jan 23 p 39
Glamor Is Where You Find It—Or Where You Make It, by Eugene C. Beaudet, June 18 p 154
How to Get Through to People, Jan 2 p 157
How to Spot Creative Employees, Apr 23 p 73
Information Must Flow Two Ways, June 18 p 81
It Takes Art to Put Payoff in Ideas, by Clifton A. Cobb, June 25 p 62
Looking Ahead: Managing in 1980, Mar 26 p 83
Make Your Recruiting Pay Off, Mar 19 p 67
Meeting Daily Is *Not* Too Often, by Marshall Payne, Jan 2 p 172
Middle Managers Need Direction, Jan 23 p 39
Planning Speeds Business Growth, by R. R. Kay, Jan 30 p 70
Shifts in Value Alter Managing, Mar 5 p 49
Shun Charity, Managers Urged, Feb 6 p 55
Slow Managers Lose in Fast-Paced World, by J. M. Still, Jr., Apr 16 p 46
Swift, Deliberate Action Smooths Merger Moves, by Austin Goodyear, May 28 p 50
'Systems' Concept Gets Big Boost, June 11 p 67
Urgent Need: Understudy Executives, June 4 p 47
Value Analysts Earn as They Learn, by T. M. Rohan, May 21 p 122
Wanted: Managers With Vision, Mar 12 p 119
What Makes Consultants Fail? May 7 p 59
What Engineers Must Learn, Feb 13 p 61
What Makes Acquisitions Succeed? Apr 16 p 45
What Worries World Executives, Jan 9 p 37
Where Management Needs Help, Jan 30 p 75
Who Decides New Product Prices? Feb 20 p 103
Who Is Ready for the Top Spot? May 28 p 49
Who'll Tame Information Flood? Jan 16 p 53
Why Industry Fails in Politics, Feb 6 p 55

See also Engineers & Engineering; Industrial Relations

Management Information Center, Inc.:

Vacation Policy Grows More Liberal, Mar 5 p 49

Manpower, Inc.:

Rented Brains Solve Technical Problems, by J. M. Still, Jr., Jan 16 p 44

Marbon Chemiacl Div., See Borg-Warner Corp.

Marcona Mining Co.:

Pellet Boom Precipitates Heavy Equipment Spending Fallout, by T. M. Rohan, Apr 16 p 31

Maremont Corp.:

Shun Charity, Managers Urged, Feb 6 p 55

Marketing

Cashing in on Technical Skills, May 21 p 121
Controls Keep Sales Effort on Target, by P. J. Cathey, May 14 p 76
Customers, Foreign Steel Spur Changes by Service Centers, by K. W. Bennett, Jan 16 p 37
Field Trips Pay Off in Quality, by T. M. Rohan, June 25 p 48
Foreign Market Research Demands Realistic Approach, by G. J. McManus, Feb 27 p 58
Marketers Face Challenge in '64, Jan 2 p 143
Screw Machine Products Fight Sales Problems, by T. M. Rohan, Feb 20 p 92
Steel Courts Autos With Ideas, by H. F. Jones, June 11 p 123
Steel Distribution by Consuming Industries, table, June 11 p 114
Technology Goes Abroad by Rough Sales Route, by Richard Raddant, June 18 p 82
U.S. Steel Turns to Hard Sell, by G. J. McManus, Jan 9 p 24
Versatility Is Star of Press Showroom, by R. H. Eshelman, June 18 p 79
What Modern Marketing Needs, Apr 9 p 81
Why Marketing Managers Fail, Apr 30 p 115

Martin Co.:

Challenge: Ways to Work Metals in Rigors of Outer Space, by R. H. Eshleman, Mar 19 p 79
Space Tool Corrals Bucking Torque, Jan 23 p 57

Marvel-Schebler, See Borg-Warner Corp.

Material Handling

Air Takes a Trolley to Work, May 21 p 143
Automation Lifts Handling Sales, by P. J. Cathey, May 14 p 64
Cranes Move by Remote Control, Feb 6 p 78
Feeding a Hungry Blast Furnace, June 11 p 148
Materials Handling Market in Revival, June 18 p 69
Old Lift Trucks Drop Profits, May 14 p 129
Rotating Combs Size Materials, Feb 6 p 79
Siphon Transfers Molten Aluminum, Mar 5 p 68
Welding Rides on a Carousel, Jan 16 p 70

Materials

Auto PAs Stress Material Costs, Apr 2 p 85
Chrome Plating Hits Deep Spots, June 18 p 101
Conversion Coat Works Overtime, Apr 16 p 69
Master Plan Guides New Products to Moneymaking Maturity, by J. E. Sandford, Apr 2 p 51
Materials Battle Is Tug-of-War, by H. R. Neal, Feb 20 p 104
Materials Hold Auto Spotlight, by H. F. Jones, Jan 23 p 28
New Plastic Develops Rubber-Like Traits, Mar 26 p 110
Sealer Foams Into Tight Spots, June 25 p 85
Steel Gains 'Protective Blanket' During Heat Treating Cycle, June 11 p 146
Tough Ceramic and Metal Unite to Defy Heat and Corrosion, Jan 9 p 49

Matson Div. See Ingersoll Milling Machine Co.

Mattison Machine Works

Abrasive Machining: The Big Bite of Tiny Grains, by R. H. Eshelman, Apr 9 p 93

McGraw-Edison Co.:

Direct Casting, Vacuum Degassing Score Gains, by G. J. McManus, Feb 6 p 43

Arthur G. McKee & Co.:

Feeding a Hungry Blast Furnace, June 11 p 148

Mergers, see Management

Metallurgy

Fighting Friction's Drag on Motion, by J. J. Obrzut, May 21 p 133
Hopkins Process Finds New Facets, Feb 6 p 72
How Residual Stress Affects Fatigue, Mar 12 p 139
Low-Carbon Steels: New Analyses Improve Enameling Traits, June 4 p 66
Metal Fracture: How and Why? Apr 16 p 66
The Peacetime Atom Blasts Away at Metalworking Barriers, by W. N. Redstreake, May 14 p 87
Stainless Shakes Off Old Image, by C. L. Kobrin, Jan 30 p 87

See also Nonferrous Metallurgy

Metals Research Ltd.:

Microscope Televises Nonmetallic Flaws, May 14 p 93

Metalworking Industry

Business Change: The Big Challenge Today, Tomorrow, by Eugene C. Beaudet, Jan 30 p 150
Business Won't Take Summer Vacation, by T. M. Rohan, June 25 p 46
Demand Swings to Durables With a Rush, by R. D. Raddant, Mar 12 p 121
Fabricators Hit "Price Squeeze", by R. W. Crosby, June 25 p 45
Golden Year Ahead for Farwest Metals, by R. R. Kay, Jan 2 p 138
It's a Rear-Guard Action Against Tariff Cuts, Feb 13 p 63
Machines Do Work of Skilled Hands, by F. J. Riley, Feb 13 p 82
Metals Take Big Part in U.S. Moves Abroad, June 4 p 33
Metalworking Sales, Profits Score Big Gains, June 25 p 49
No End in Sight for Business Spending Boom, June 4 p 49
Retraining Program Benefits Industry, by T. M. Rohan, Apr 9 p 70
Small Businesses Get a Boost, by T. M. Rohan, Jan 2 p 130

Metco, Inc.:

Plasma Flame Blazes New Trails, by R. R. Irving, Mar 12 p 135

Metcut Research Associates, Inc.:

Abrasive Machining: The Big Bite of Tiny Grains, by R. H. Eshelman, Apr 9 p 93
Hopkins Process Finds New Facets, Feb 6 p 72

Michigan-Dynamics, Inc.:

Hitching Ride to R&D Fallout Is Way to Spur Growth, by R. H. Eshelman, Feb 6 p 56

Micromatic Hone Corp.:

'Energy Density': A New Concept for Efficient Metal Removal, May 28 p 74

Microwave Instruments Co.:

'Radar Waves' Bounce to Gage Thickness, June 4 p 74

Midland-Ross Corp.:

Castings Shed Stresses in Argon Furnaces, Mar 5 p 78

Midway Co.:

Cast Nylon Parts Resist Wear in Steel Mills and Presses, Jan 23 p 62

Milling

How to Prevent Tool Cracking, May 21 p 141
Milling With an Eye of Light, Mar 5 p 70

The Mills Co.:

Adhesive 'Cold Bonds' Steel to Paper Honeycomb Core, by R. H. Lindbloom, Mar 19 p 84

Mingo Nonferrous Metals Inc.:

Flexible Drives Suppress Heat, by W. N. Redstreake, Apr 2 p 62

Miniature Precision Bearings, Inc.

Bearings Roll into New Markets, by T. M. Rohan, Mar 26 p 74

Miniaturization

Bearings Roll into New Markets, by T. M. Rohan, Mar 26 p 74

Mining

Coal Mining Unearths New Look, by T. M. Rohan, May 21 p 109
Meeting Probes Metals Mining and Uses, by James Beizer, Feb 27 p 43
President's Role Hit in Surplus Reform Bill, by R. W. Crosby, Feb 6 p 45

Mining Equipment

Pellet Boom Precipitates Heavy Equipment Spending Fallout, by T. M. Rohan, Apr 16 p 31

Minnesota Mining & Mfg. Co.:

Adhesives Set Up New Products, by A. W. Young, Apr 30 p 127

Modine Mfg. Co.:

Quality Sights Raised to Meet New Demands, by Vincent Betko, Apr 30 p 116

Molding, Molds

Data System Guides Moldmaking, May 28 p 76
Molds Harden in Own Heat, Apr 2 p 54
Sand Castings Gain Precision With Flaskless Molds, May 7 p 78
Thermosets Take Shape Quickly in 'Injection' Molding Unit, Jan 9 p 58
When to Use Plastic Rotational Molding, Jan 30 p 100

Moore Products Co.:

Air Gages 'Pull In' Tolerances, by Robert Johnston, Feb 13 p 80

J. A. Moorhead Associates

N/C Course for Builders, Buyers, Jan 16 p 51

Motors

Motors Double Their Output, May 14 p 94
RONS 'Stocks' Motors Quickly, Feb 20 p 159

N

Normco Materials, See Telecomputing Corp.

National Castings Co.:

Mills Boost Use of Rubber Shocks, Mar 12 p 191

National Industrial Conference Board

Antitrust Rulings Block Growth, by J. D. Baxter, Mar 12 p 106
Fast Business Pace to Rule All Year, by J. D. Baxter, May 28 p 38
How Business Views Inflation, May 28 p 49
How Development Programs Change, Jan 30 p 75
No End in Sight for Business Spending Boom, June 4 p 49
Patent Management Grows Difficult, June 11 p 129
What's Best Way to Measure R&D? Apr 2 p 33
What Worries World Executives, Jan 9 p 37
Who Decides New Product Prices? Feb 20 p 103

National Management Assn.:

Where Management Needs Help, Jan 30 p 75

National-Standard Co.:

Wire Cleans Up Weld Problems, June 4 p 71

National Starch & Chemical Corp.:

Adhesives Set Up New Products, by A. W. Young, Apr 30 p 127

National Steel Corp.:

National Nails Down Casting Project, Mar 26 p 73

Nelmor Mfg. Corp.:

Chrome Plating Hits Deep Spots, June 18 p 101

Newton Co.:

Cranes Move by Remote Control, Feb 6 p 78

Niagara Machine & Tool Works

Versatility Is Star of Press Showroom, by R. H. Eshelman, June 18 p 79

Nickel

Nickel Finds New Uses, New Growth, by J. D. Baxter, Jan 23 p 40
Plating Teams Up With Rolling to Clad Nickel Onto Steel, by J. E. Sandford, May 28 p 63
Powder Metallurgy Gets Rolling, by C. L. Kobrin, Apr 23 p 89

Nitriding

'Enriched' Steels Show New Pep, by C. L. Kobrin, Jan 9 p 54

Nonferrous Metallurgy

Aluminum's Boiling Pot of Ideas, by C. L. Kobrin, June 18 p 93

Nonferrous Metals

Aluminum Shines, Lead Dulls in Washington, by R. R. Kay, Apr 2 p 30
Meeting Probes Metals Mining and Uses, by James Beizer, Feb 27 p 43
No End in Sight for Business Spending Boom, June 4 p 49
Nonferrous Markets Continue Growth, by F. J. Starin, Jan 2 p 131
Palladium Curbs Hydrogen Waste, May 7 p 86
President's Role Hit in Surplus Reform Bill, by R. W. Crosby, Feb 6 p 45
Secondary Metals Industry Forecasts Gains This Year, Jan 9 p 81

Nonferrous Metals, Bending & Forming

Brittle Metals Turn Ductile in Hydrodynamic Forming, May 28 p 68
Hot Punch Shapes New Laminate, Apr 2 p 64
How to Apply Explosive Forming, June 11 p 150
How to Bend Tubing Efficiently, Mar 12 p 146
Rolls Contour Tough Alloys, Apr 23 p 94
Tubes Extruded Under Water, Jan 16 p 73
Which Way to Form Sheet Metal? June 25 p 82

North American Aviation, Inc.:

Film Package Speeds X-Raying of Heavy Metal Sections, Apr 30 p 138
How to Apply Explosive Forming, June 11 p 150
Planning Speeds Business Growth, by R. R. Kay, Jan 30 p 70

Norton Co.:

Abrasive Machining: The Big Bite of Tiny Grains, by R. H. Eshelman, Apr 9 p 93

Nozzles

Tracer Triples Nozzle Output, Jan 23 p 61

Nuclear Metals, Inc.:

Extrusion Forms Tungsten Tubes, Jan 16 p 78

O

Ohio Crankshaft Co.:

Applications Continue to Mount for High-Frequency Welding, Apr 9 p 101

Oilfield Equipment

'Huge Steel Iceberg to Seek Oil, by R. R. Kay, June 4 p 42

Okonski, Ray, see Michigan-Dynamics, Inc.

Olin Mathieson Chemical Corp.:

Aluminum's Boiling Pot of Ideas, by C. L. Kobrin, June 18 p 93
Information Must Flow Two Ways, June 18 p 81
Olin Tries Aluminum Ingot Price Hike, by James Beizer, June 11 p 113

Opinion Research Corp.:

How White-Collar Workers Feel, May 21 p 121

Optics, See Instruments

Optron Corp.:

Measuring Strain at 7000°F, Mar 19 p 89

Ore, Beneficiation

Low Grade Ore Enriched on Site, Feb 27 p 77
Minnesota Studies Ore Concentrate Process, June 4 p 37
Pellet Boom Precipitates Heavy Equipment Spending Fallout, by T. M. Rohan, Apr 16 p 31

Ore, Ferrous

Good Start for Great Lakes Ore, by T. M. Rohan, June 4 p 36
Japanese Offered Iron Ore Deal, by R. R. Kay, Feb 20 p 98
Low-Grade Iron Ore, Scrap Get a Boost, Mar 19 p 57
Mesabi Future Hangs on Fall Referendum, by T. M. Rohan, Jan 23 p 27

P

Packaging

Packaging Industry Can't Be Contained, by James Beizer, Apr 30 p 100

See also Containers

Paints & Painting

Black Plate Passes Coating Test, Jan 16 p 72
Coatings Prevent Oxide Scale, Jan 23 p 54
Electrocoating Gains as Primer, by H. F. Jones, May 14 p 71
Electronic Touch Guides Coating in Automotive Prepaint Line, June 18 p 104
Primer Saves Finishing Steps on Reinforced Plastic, June 11 p 154
Sealer Foams Into Tight Spots, June 25 p 85

Palmer-Shile Co.:

Computer Verifies Beam Design, by Lee Hall, May 7 p 76

Paperwork

Coded Form Puts Zip in Handling, by G. J. Gunderman, May 14 p 87
Microfilms, EDP Combined in File, June 18 p 140
Who'll Tame Information Flood? Jan 16 p 53

Parker Rust Proof, See Hooker Chemical Corp.

Patents

Patent Management Grows Difficult, June 11 p 129

Peening

How Residual Stress Affects Fatigue, Mar 12 p 139

Pendleton Tool Industries

Hand Tools Hammer Out Big Sales, by T. M. Rohan, Feb 13 p 46

Performance Measurements Co.:

Data Culled from Assembly Lines for 'Instant' Quality Control, Apr 2 p 58

Perkin-Elmer Corp.:

Hot Targets Flash Flaw Patterns, by W. N. Redstreake, Mar 5 p 65

Perry Equipment Corp.:

When to Consider Used Equipment, June 11 p 186

Pfaudler Permutit, Inc.:

Tough Ceramic and Metal Unite to Defy Heat and Corrosion, Jan 9 p 49

Philco Corp.:

Gage Reads Width of Hot Strip, Apr 2 p 61
Workers Are Urged to Be More Flexible, Mar 19 p 55

Phillips International Co.:

Fastener Design Prevents Camout, Feb 6 p 76

Photography

Photo-Etching Makes Tiny Parts with Hairline Accuracy, by A. F. Legun, Apr 16 p 70

Photolastic, Inc.:

Spray-On Plastics Pinpoint Flaws, Apr 2 p 56

Pipe, Tubes

Extrusion Forms Tungsten Tubes, Jan 16 p 78
How to Bend Tubing Efficiently, Mar 12 p 146
Tanks, Pipe Use More Reinforced Plastics, Feb 13 p 47
Tubes Extruded Under Water, Jan 16 p 73
Wound Tubing: Novel Approach to Aluminum Fabrication, by R. R. Irving, May 7 p 73

Pittsburgh Plate Glass Co.:

Adhesives Set Up New Products, by A. W. Young, Apr 30 p 127

Plant Equipment

When to Consider Used Equipment, June 11 p 186

Plant Layout

Industrial Models: A 3-D Approach Puts Problems in Perspective, by G. J. McManus, June 25 p 75

Plant Location

Is the Trend to Move Abroad? Jan 9 p 23

Plastics

Auto Plastics Pick Up Speed, by H. F. Jones, Mar 12 p 113
Cast Nylon Parts Resist Wear in Steel Mills and Presses, Jan 23 p 62
Fighting Friction's Drag on Motion, by J. J. Obrzut, May 21 p 133
New Plastic Develops Rubber-Like Traits, Mar 26 p 110
Plastic Checks Die Profiles, by M. K. Young, Feb 27 p 80
Plastic Tightens Grip on Metal, Mar 26 p 100
Plastics Shape Production Records, by J. M. Still, Jr., Feb 6 p 41
Plated Plastics Ride Design Wave, June 25 p 88
Primer Saves Finishing Steps on Reinforced Plastic, June 11 p 154
Spray-On Plastics Pinpoint Flaws, Apr 2 p 56
Tanks, Pipe Use More Reinforced Plastics, Feb 13 p 47
Teflon Fabric Lubricates Bearings, Feb 27 p 79
Thermosets Take Shape Quickly in 'Injection' Molding Unit, Jan 9 p 58
When to Use Plastic Rotational Molding, Jan 30 p 100

Plates, Sheets, Strip

'Alloys' Strengthen Plate Sales, by K. W. Bennett, Feb 20 p 90
Black Plate Passes Coating Test, Jan 16 p 72
Gage Reads Width of Hot Strip, Apr 2 p 61
Math Model Guides Strip Rolling, June 4 p 64
Mill Rolls Circular Steel Plate, by C. L. Kobrin, Feb 6 p 80
Plasma Arc Takes Thick Slices from Stainless Steel Plate, by F. R. Romeo, Jan 16 p 67
Powder Metallurgy Gets Rolling, by C. L. Kobrin, Apr 23 p 89
Steel Plate Orders Push Capacity, by G. J. McManus, May 14 p 62
Which Way to Form Sheet Metal? June 25 p 82
X-Ray 'Mike' Reads Strip Thickness, Apr 9 p 103
X-Rays Record Coating Weights, Apr 16 p 64

Pollution, Air:

Approval See for Smog Control Units, by R. R. Kay, May 5 p 44
Four Smog Devices OKd by California, by H. F. Jones, June 25 p 55
SAE Seeks Solution to Smog, by H. F. Jones, June 18 p 75

Polymer Corp.:

Cast Nylon Parts Resist Wear in Steel Mills and Presses, Jan 23 p 62

Porcelain Enamel

Low-Carbon Steels: New Analyses Improve Enameling Traits, June 4 p 66

Powdered Metals

Aluminum Made Into Bearings by New Powder Process, by C. L. Kobrin, Apr 30 p 135
Aluminum's Boiling Pot of Ideas, by C. L. Kobrin, June 18 p 93
Extrusion Forms Tungsten Tubes, Jan 16 p 78
Palladium Curbs Hydrogen Waste, May 7 p 86
Powder Metallurgy Gets Rolling, by C. L. Kobrin, Apr 23 p 89
Powdered Metals Press for Records, by K. W. Bennett, May 7 p 50

Power

Air Takes a Trolley to Work, May 21 p 143
Natural Gas Is on the Rise, May 7 p 109
Plasma Arc Takes Thick Slices from Stainless Steel Plate, by F. R. Romeo, Jan 16 p 67

Precision Metals Div., See Hamilton Watch Co.

Prenco, Inc.:

Job Shop Finds Pores in Castings With Low Cost Leak Testing, Mar 5 p 76

Presswork

Die Stamps and Stacks in Sequence, by C. L. Kobrin, Feb 20 p 122
How to Design Stiffening Ribs for Sheet-Metal Stampings, by Federico Strasser, Mar 19 p 90
Long, Short Runs Justified on Heavy-Duty Stamping Line, Feb 13 p 84
No End in Sight for Business Spending Boom, June 4 p 49
Press Line Switches Dies Quickly, May 7 p 83

Prices:

Alcoa OK's Aluminum Ingot Hike, by James Beizer, Mar 12 p 104
Alcoa Reverses Stand; Follows Olin Lead, by James Beizer, June 18 p 66
Aluminum Profits Up; Price Increases Seen, by James Beizer, Apr 30 p 103
Fabricators Hit "Price Squeeze", by R. W. Crosby, June 25 p 45
Flexibility Rules Steel Pricing, by G. J. McManus, June 11 p 68
Guidelines: Who's Breaking Them This Time? By Eugene C. Beaudet, Apr 23 p 136
Hand That Feeds Is Snapped At, by G. J. McManus, June 25 p 43
Have Stainless Prices Been Cast Adrift—or Are They More Secure? By G. J. McManus, Apr 9 p 66
Hope Fades for Quantity Pricing, Mar 5 p 107
Industry Fights Price 'Guidance', by R. W. Crosby, Feb 20 p 87
Marketing Discord Increases as Aluminum Orders Gain, by G. J. McManus, May 7 p 43
Olin Tries Aluminum Ingot Price Hike, by James Beizer, June 11 p 113
Price Fire Engulfs Aluminum, Fans Out to Many Product Areas, by P. J. Cathey, Jan 23 p 23
Price Hikes Are Inevitable, by H. R. Neal, Mar 26 p 72
Price Indictments Plague Steel, Apr 16 p 34
Price and Production Data, Jan 2 p 193
Price Schedules Simplify Buying, Feb 6 p 111
Price Selling: Can Industry Kick the Habit? By Eugene C. Beaudet, Mar 26 p 146
Service Suffers in Price Wars, Apr 23 p 127
Uncertainty Wracks Copper Users; They Prepare for the Worst, Apr 23 p 55
Who Decides New Product Prices? Feb 20 p 103
Will Pricing Tactics Become Obsolete? By Eugene C. Beaudet, Feb 20 p 168

Process Control

Can Computers Cut Out 'Debugging' Period? By R. H. Eshelman, Feb 6 p 53
Computer Control 'Grows' on Job, by W. N. Redstreake, May 14 p 65
Computer Cuts Corners in Turning, Mar 26 p 108
Computer Makers Eye Industrial Market, by K. W. Bennett, Feb 27 p 46
Data Culled from Assembly Lines for 'Instant' Quality Control Apr 2 p 58
GE Offers Low-Cost N/C Unit, Jan 23 p 37
Math Model Guides Strip Rolling, June 4 p 64
Openhearth Model Predicts Effects of Changes in Melting Bath, Mar 12 p 140
Programmer Runs Vacuum Melting, Jan 16 p 80
Putting New Teeth in Inspection, by R. N. Redstreake, Feb 27 p 69

Prudential Insurance Co.:

No Slowdown Due for Farwest Construction, by R. R. Kay, Jan 16 p 50

Pumps & Compressors

Abradable Coatings Resist Heat, Apr 30 p 137

Purchasing

Auto PAs Stress Material Costs, Apr 2 p 85
Cerro Sales VP Plays Dual Role, June 25 p 112
Consultants Can Cure Buying Ills, Jan 30 p 141
Equipment Buying on Easy Terms, by R. H. Eshelman, June 4 p 45
Letters Spell Out Supplier Success, Mar 19 p 125
PAs Face Longer Lead Times, Feb 27 p 113
PA Stresses Human Relations, Apr 16 p 103
USS Continues to Shop Local, Feb 13 p 121
When to Consider Used Equipment, June 11 p 186

Purchasing, Government

Can Equipment Be Bought by Remote Control? By Eugene C. Beaudet, Apr 16 p 112
Casting Refunds: Pro and Con, Mar 26 p 137
Chances Fade for New Stockpile Law, by James Beizer, June 4 p 34
Defense Buying: Cost Cutting Can Cost Too Much! By Eugene C. Beaudet, Apr 30 p 228
DoD Contract Managing May Be Centralized, Apr 23 p 57
Has Tin Price Rampage Ended? By James Beizer, Mar 5 p 36
Pentagon Speeds Up Its Tool Buying, by R. W. Crosby, May 7 p 45
Play Safe and Keep Contracts Healthy, by J. M. Still, Jr., Jan 9 p 28
President's Role Hit in Surplus Reform Bill, by R. W. Crosby, Feb 6 p 45
Small Business' Fight for Share of U.S. Contracts Toughens, Feb 27 p 39

Q

Quality Control

Automakers Stress Better Quality, by H. F. Jones, Apr 9 p 68
Data Culled from Assembly Lines for 'Instant' Quality Control, Apr 2 p 58
How to Assure Weld Performance, by S.A. Greenberg, Mar 19 p 86
Quality Sights Raised to Meet New Demands, by Vincent Betko, Apr 30 p 116
Spray-On Plastics Pinpoint Flaws, Apr 2 p 56
Total Quality Control Program Puts 'Dent' in Rework Costs, by W. N. Redstreake, Feb 20 p 124
Screw Machine Products Fight Sales Problems, by T. M. Rohan, Feb 20 p 92

R

R&D, See Science & Research

Radio Corp. of America:

Air-to-Electronic Gaging System 'Mikes' Bores; Checks Tapers, May 28 p 72

Railroads

Rail Pact Heralds New Labor Peace, Apr 30 p 99
Railroads Gain Speed in Drive for Bulk Transport Market, by K. W. Bennett, June 4 p 29

Railroad Equipment

Stainless Shakes Off Old Image, by C. L. Kobrin, Jan 30 p 87

Recruiting Programs

How Industry Views Integration, by G. J. McManus, Feb 27 p 44
Make Your Recruiting Pay Off, Mar 19 p 67
Urgent Need: Understudy Executives, June 4 p 47

Refractories

ECM Sculptures Complex Shapes in Tough Alloy Forgings, by A. W. Young, June 11 p 143

Republic Steel Corp.:

Steelmen Extend Nuclear Gaging, Mar 12 p 144

Reynolds Metals Co.:

Aluminum's Boiling Pot of Ideas, by C. L. Kobrin, June 18 p 93
Does Industry Want Conformists? June 11 p 129

Roads

Earthmovers Push Ahead in Sales, by K. W. Bennett, Feb 6 p 46

Rockwell Mfg. Co.:

A Well Planned Program Can Carry the Message, by E. F. Foubert, Jan 2 p 165

Roding Electric Co., Ltd.:

'Sounding Out' Cast Structures, May 21 p 146

Rolling Mills

Automatic System Logs Length of Sections in Hot Mill, Mar 26 p 104
Grinding Coolant Sheds Waste, Jan 30 p 95
Math Model Guides Strip Rolling, June 4 p 64
Mill Rolls Circular Steel Plate, by C. L. Kobrin, Feb 6 p 80
New USS Strip Mill Fed by Continuous Casting, May 7 p 47
Powder Metallurgy Gets Rolling, by C. L. Kobrin, Apr 23 p 89
Rolls Contour Tough Alloys, Apr 23 p 94
Thin Foil Gets Heat Treatment in Feed-Through Furnace, by A. W. Young, June 25 p 80

Rootes Motors

Rootes Puts an Imp in the Import Market, Mar 12 p 107

Rubber

Mills Boost Use of Rubber Shocks, Mar 12 p 191

J. Russel & Co.:

Is EDP Vital to Stock Control? May 21 p 197

S

SKF Industries, Inc.:

Engineers Put Friction to Rout via New Lubrication Concept, by J. E. Sandford, Jan 23 p 51
Unions Put More 'Give' into Give-and-Take Bargaining, Mar 19 p 69

Safety

Industry Weathers Flood Damage, Mar 19 p 54
Play Safe and Keep Contacts Healthy, by J. M. Still, Jr., Jan 9 p 28
Steel Structures Shed Weight, by L. S. Beedle, Feb 6 p 74
Workers Wear Own Air Conditioner, Mar 12 p 143
See also Pollution, Air

Savair Products Co.:

Portable System Furnishes Air for Mechanized Spotwelding, by R. R. Irving, Jan 9 p 52

Schacht Steel Corp.:

Fabricators Hit "Price Squeeze", by R. W. Crosby, June 25 p 45

Science & Research

Cashing in on Technical Skills, May 21 p 121
Congress Seeks Ways to End Chaos and Waste in R&D, by R. W. Crosby, Apr 2 p 24
Don't Brake Technical Progress, by R. H. Eshelman, Mar 26 p 81
Don't Conduct R&D in a Vacuum, June 18 p 81
Government and R&D: Is Honeymoon Over? By R. W. Crosby, Mar 12 p 103
Hitching Ride on R&D Fallout Is Way to Spur Growth, by R. H. Eshleman, Feb 6 p 56
Plan Steps Up R&D Pace and Payoff, by Carl E. Woodward, Jan 9 p 38
Research Powers Battery Sales, by P. J. Cathey, Apr 23 p 62
SAE Seeks Solution to Smog, by H. F. Jones, June 18 p 75
Stanford Builds Atom Smasher 2-Miles-Long, by R. R. Kay, May 14 p 72
Washington Plans for Atom Center, by R. R. Kay, Feb 27 p 52
What's Best Way to Measure R&D? Apr 2 p 33
Why Technical Innovation Lags, Apr 16 p 45

See also Metallurgy; Nonferrous Metallurgy

Scrap

Low-Grade Iron Ore, Scrap Get a Boost, Mar 19 p 57
Scrap and Sinter: New Bedfellows, Mar 26 p 97
X-Ray Unit Speeds Scrap Analysis, Apr 23 p 59

Scrap Industry

Formal Program Trains Brokers, Jan 16 p 105
Generators in the Same Boat with Uneasy Scrap Industry, by Tom Campbell, Jan 30 p 60

Screening

Rotating Combs Size Materials, Feb 6 p 79

Screw Machine Products

Screw Machine Products Fight Sales Problems, by T. M. Rohan, Feb 20 p 92

Sealants

Adhesives Set Up New Products, by A. W. Young, Apr 30 p 127
Sealer Foams Into Tight Spots, June 25 p 84
Teflon Seals Aluminum Hardcoat, by J. E. Sandford, Mar 19 p 82

Selectrons, Ltd.:

Hand-Held Stylus 'Erases' Metal, Feb 13 p 90

Service Centers, See Inventories; Warehousing

Sharon Steel Corp.:

Henry A. Roemer, Sharon Steel Director, Retires, June 4 p 37

Sheffield Corp., See Bendix Co.

Shell Oil Co.:

Adhesives Set Up New Products, by A. W. Young, Apr 30 p 127
Huge Steel Iceberg to Seek Oil, by R. R. Kay, June 4 p 42

Shipbuilding

Aluminum Barges into Marine Markets, by K. W. Bennett, Apr 9 p 69
What's Keeping the Northwest Strong? By R. R. Kay, June 25 p 56

Sibley Machine & Foundry

Induction Furnaces Are Hot, by T. M. Rohan, Jan 16 p 42

Sifco Metachemical, See Steel Improvement & Forge Co.

Sintering

Scrap and Sinter: New Bedfellows, Mar 26 p 97

A. O. Smith Corp.:

Auto Plastics Pick Up Speed, by H. F. Jones, Mar 12 p 113

Snyder Corp.:

Metal Industries Step Up Automation Trend, by R. H. Eshelman, May 21 p 119

Soldering

Soft Solder Joins Tube to Plate, June 18 p 103

Sonobond Corp., See Aeroprojects, Inc.

South African Iron & Steel Industrial Corp. (ISCOR):

Tiling Furnaces Take Turns in Tandem Steelmaking, May 14 p 99

Speedlap Corp.:

Abrasive Machining: The Big Bite of Tiny Grains, by R. H. Eshelman, Apr 9 p 93
Finishing Gets a New Tool: Free Abrasive Machining, Feb 13 p 88

Sperry Products, see Automation Industries, Inc.

Stainless Steel

Have Stainless Prices Been Cast Adrift—or Are They More Secure? By G. J. McManus, Apr 9 p 66
New Stainless Fights Hot Acids, Feb 6 p 82
Plasma Arc Takes Thick Slices from Stainless Steel Plate, by F. R. Romeo, Jan 16 p 67
Rods Hold Tight Weld Chemistry, Feb 20 p 127
Rolls Contour Tough Alloys, Apr 23 p 94
Stainless Shakes Off Old Image, by C. L. Kobrin, Jan 30 p 87

Stamping, see Presswork

Standard Electronics Research Corp:

Optical 'Mike' Gages Hot Wire, Feb 20 p 121

Standard Pressed Steel Co.:

Fasteners Keep Their Heads, June 11 p 156

Standard Register Co.:

Coded Form Puts Zip in Handling, by G. J. Gunderman, May 14 p 91

Standards

Fasteners Latch on to Surging Markets, by T. M. Rohan, Feb 27 p 41
Motors Double Their Output, May 14 p 94

Stanford Research Institute

Aerospace's Future Hinges on Planning, by R. R. Kay, Jan 23 p 36

Stanley Tools, Inc.:

Fastener Design Prevents Camout, Feb 6 p 76
Designers Trim Production Costs by Clarifying Blueprints, by P. D. Prudden, Jan 16 p 74

Steel

Builders Led Steel Use in '63, June 11 p 114
Can Market Battle Forces Basic Changes in Aluminum, Steel, by G. J. McManus, Mar 5 p 31
Steel Distribution by Consuming Industries, table, June 11 p 114

Steel, Bending & Forming

Brittle Metals Turn Ductile in Hydrodynamic Forming, May 28 p 68
How to Apply Explosive Forming, June 11 p 150
Which Way to Form Sheet Metal? June 25 p 82

Steel, Treatment

Hot Metal, Vacuum Produce Huge Heats, by G. J. McManus, May 28 p 37
Steel Gains 'Protective Blanket' During Heat Treating Cycle, June 11 p 146

Steel Improvement & Forge Co.:

ECM Sculptures Complex Shapes in Tough Alloy Forgings, by A. W. Young, June 11 p 143

Steel Industry

Business Won't Take Summer Vacation, by T. M. Rohan, June 25 p 46
The Case Against Steel Imports, by Eugene C. Beaudet, May 28 p 34
Coming—Dumping Law Overhaul, by G. J. McManus, Mar 26 p 71
Demand Swings to Durables With a Rush, by R. D. Raddant, Mar 12 p 121
Did 1963 Launch a New Era? By G. J. McManus, Apr 2 p 35
Dumping of Steel Is Global Problem, by G. J. McManus, Jan 2 p 128
Fabricators Hit "Price Squeeze", by R. W. Crosby, June 25 p 45
First Word Is Out on Auto Steel Dip, by H. F. Jones, Mar 5 p 33
Flexibility Rules Steel Pricing, by G. J. McManus, June 11 p 68
How Foreign Mills Look to U.S. Steelmakers—From the Inside, by G. J. McManus, Feb 20 p 85
Industry, Labor Take Stitch-in-Time Tack in Contract Negotiations, by R. W. Crosby, Apr 9 p 63
Inventory Turnaround Due by May, Feb 13 p 45
Is Steel Capital Spending High Enough? By G. J. McManus, Jan 30 p 76
Japan's View About 'Dumping', by G. J. McManus, Apr 16 p 36
Mills Look to Expanding Future, by G. J. McManus, Mar 19 p 56
No End in Sight for Business Spending Boom, June 4 p 49
PAs Face Longer Lead Times, Feb 27 p 113
Price Indictments Plague Steel, Apr 16 p 34
Revised Dumping Controls Draw Only Lukewarm Mill Reaction, Apr 30 p 97
Steel Chief Dissects Industry's Future, Feb 27 p 45

Steel Turns the Profit Corner, by R. D. Raddant, Feb 6 p 42
Steel Urges Treasury 'Revise Dumping Act', by R. W. Crosby, Jan 30 p 63
Steelmakers Fight for Wire Sales, by G. J. McManus, May 7 p 46
Steelmen Cite Prospects, Problems, by G. J. McManus, June 4 p 32
Will New Tariff Help ECSC? Feb 13 p 48
World Steel Demand Is Rising, But Is Import Threat Receding? By G. J. McManus, May 21 p 103

Steelmaking

'Enriched' Steels Show New Pep, by C. L. Kobrin, Jan 9 p 54
Generators in the Same Boat with Uneasy Scrap Industry, by Tom Campbell, Jan 30 p 60
Low-Grade Iron Ore, Scrap Get a Boost, Mar 19 p 57
Scrap and Sinter: New Bedfellows, Mar 26 p 97
Tilting Furnaces Take Turns in Tandem Steelmaking, May 14 p 99

Stockpiling, See Purchasing, Government

F. J. Stokes Corp.:

Thermosets Take Shape Quickly in 'Injection' Molding Unit, Jan 9 p 58

Stoody Co.:

Rods Hold Tight Weld Chemistry, Feb 20 p 127

Structural Steel

No Slowdown Due for Farwest Construction, by R. R. Kay, Jan 16 p 50
Steel Structures Shed Weight, by L. S. Beedle, Feb 6 p 74

See also Construction

Studebaker Corp.:

Is the Trend to Move Abroad? Jan 9 p 23

Sundstrand Corp.:

Carbide-Clad Tap Defies Wear, June 18 p 106
New N/C Concept Cuts Parts Down to Size, by R. H. Eshelman, Feb 13 p 59

Swindell-Dressler Co.

Grinding Coolant Sheds Waste, Jan 30 p 95

T

TRG, Inc.:

Laser Welding: Set for Action, Jan 23 p 64

Taconite, See Ore Beneficiation

Tanks

Hybrid Gas Cuts Cutting Costs, June 11 p 153
L-P Tank Sales Expanding Again, by K. W. Bennett, Apr 16 p 38

Tariffs, See Foreign Trade; Legislation

Taxation

California Profits Measure Success, by R. R. Kay, Apr 23 p 68
Congress May Act on State Taxes, by R. W. Crosby, June 18 p 63
Experts Wonder Where Tax Cut Went, by R. W. Crosby, May 21 p 105
Fiscal Experts See Economic Boom, by R. W. Crosby, Feb 27 p 42
How About a Common Market for the U.S.? By Eugene C. Beaudet, Jan 23 p 96
Mesabi Future Hangs on Fall Referendum, by T. M. Rohan, Jan 23 p 27
State Taxes: Who Pays What, Where and Why? By Eugene C. Beaudet, June 25 p 124
Tax Cuts: Can the Economy Keep Cool? By Eugene C. Beaudet, Mar 5 p 116
Tax Reform Boosts Tools to Decade High, by R. H. Eshelman, Jan 30 p 73

Telecomputing Corp.:

Adhesives Set Up New Products, by A. W. Young, Apr 30 p 127
Why Not Use Metal Wires in Filament Winding? By D. V. Rosato, Mar 26 p 102

Television

Color TV Sales Take on Bright Hue, by K. W. Bennett, Apr 2 p 26
Microscope Televises Nonmetallic Flaws, May 14 p 93

Tellurium

Tellurium Helps Bars Shed Chips, Apr 9 p 104

Testing & Inspection

Angled Sound Waves Find Flaws, Feb 13 p 87
Coded Form Puts Zip in Handling, by G. J. Gunderman, May 14 p 91
Daytona Test Feathers Comet's Nest, by H. F. Jones, Jan 16 p 49
Film Package Speeds X-Raying of Heavy Metal Sections, Apr 30 p 138
GM's Test Program Proves Out, by H. F. Jones, May 21 p 115
Guidelines for Ductile Iron Stress Structure Control, May 14 p 96
Hot Targets Flash Flaw Patterns, by W. N. Redstreake, Mar 5 p 65
Job Shop Finds Pores in Castings With Low Cost Leak Testing, Mar 5 p 76
Line Gives Gears Fast Checkout, Feb 6 p 69
Mass Spectrometer Checks Welds, Jan 30 p 98
Microscope Televises Nonmetallic Flaws, May 14 p 93
Putting New Teeth in Inspection, by W. N. Redstreake, Feb 27 p 69
'Sounding Out' Cast Structures, May 21 p 146
Spray-On Plastics Pinpoint Flaws, Apr 2 p 56
Tailored Tests Upgrade Copper, by Paul Garatoni, Apr 23 p 92
Testing for 100% Reliability, by R. H. Eshelman, May 28 p 66
Ultrasonics Industry Looking to Climb onto Profit Curve, by K. W. Bennett, Jan 30 p 57
Ultrasound Maps Flaws in Bonds, by W. N. Redsteake, Jan 23 p 58
X-Ray Unit Made Pocket Size, Jan 9 p 60

Textron Industries, Inc.:

Raycarl Process: Its Impact on Cold-Headed Parts, by H. F. Phipard, June 4 p 61

Thermal Dynamics Corp.:

Plasma Flame Blazes New Trails, by R. R. Irving, Mar 12 p 135

Thompson Ramo Wooldridge, Inc.:

Automakers Stress Better Quality, by H. F. Jones, Apr 9 p 68
Travel Indirect Path to Results, by Stanley C. Pace, Jan 2 p 162
Value Analysts Earn as They Learn, by T. M. Rohan, May 21 p 122

Timken Roller Bearing Co.:

Press Centers Red Hot Billets, Jan 23 p 60

Tin

Has Tin Price Rampage Ended? By James Beizer, Mar 5 p 36
Tin: Cheap Prices and Political Shortages, by James Beizer, June 11 p 117
Will U.S. Surplus Tin Go on Futures Market? Jan 9 p 81

Tinplate

Can Market Battle Forces Basic Changes in Aluminum, Steel, by G. J. McManus, Mar 5 p 31
Farwest Canners Have Big Tinplate Appetite, by R. R. Kay, Apr 30 p 110
Steel Foil May Wrap Up New Sales, by G. J. McManus, Apr 23 p 60
Tinplate Foil Enters the Market Fighting, Apr 16 p 39
X-Rays Record Coating Weights, Apr 16 p 64

Titanium

A-11 Sets Pace in Mach Race, Mar 12 p 114

Tocco Div. See Ohio Crankshaft Co.

Tools

Hand Tools Hammer Out Big Sales, by T. M. Rohan, Feb 13 p 46
Space Tool Corrals Bucking Torque, Jan 23 p 57

Tools, Cutting

Electrode Coats Tools With Hard Carbide, Jan 23 p 56
How to Prevent Tool Cracking, May 21 p 141
Nine-in-One Tool Saves Time, Apr 16 p 72
Quick-Change Dies for Drawing, Mar 5 p 75
Stiff Spindle Speeds Cutting, by R. H. Eshelman, June 25 p 78

Trade Associations

Directory of Trade Associations, Jan 2 p 214
1964 Meetings and Conventions, Jan 2 p 206

Training Programs

Formal Program Trains Brokers, Jan 16 p 105
How Development Programs Change, Jan 30 p 75
N/C Course for Builders, Buyers, Jan 16 p 51
Quiet Tragedy in the War on Poverty, by Eugene C. Beaudet, Apr 2 p 94
Retraining Program Benefits Industry, by T. M. Rohan, Apr 9 p 70
Skilled Workers: The Big Need Is a Push from the Top, by Eugene C. Beaudet, May 21 p 210
Technician Shortage Stirs New Action, Mar 19 p 53
Technology Goes Abroad by Rough Sales Route, by Richard Raddant, June 18 p 82
Value Analysts Earn as They Learn, by T. M. Rohan, May 21 p 122

Transportation

Seaway Steams to Record in 5th Year, Jan 9 p 27

Transportation Equipment

Aluminum Wants Transport Market, by P. J. Cathey, Feb 20 p 88
Aluminum's Boiling Pot of Ideas, by C. L. Kobrin, June 18 p 93
Business Planes Crowd the Sky, by A. M. Copper, Jan 16 p 39
No End in Sight for Business Spending Boom, June 4 p 49
Railroads Gain Speed in Drive for Bulk Transport Market, by K. W. Bennett, June 4 p 29

Tungsten

Carbide-Clad Tap Defies Wear, June 18 p 106
Extrusion Forms Tungsten Tubes, Jan 16 p 78

U

U.S.S.R.:

Should U.S. Woo the Red Market? Apr 9 p 82

Udylite Corp.:

Platers Put 'Dirt' to Work, by C. L. Kobrin, Feb 13 p 77

Ultrasonics

Angled Sound Waves Find Flaws, Feb 13 p 87
Putting New Teeth in Inspection, by R. N. Redstreake, Feb 27 p 69
Tests Insure Sound Castings, Feb 20 p 128
Ultrasonic Cleaning Works Six Ways, Jan 9 p 56
Ultrasonics Industry Looking to Climb onto Profit Curve, by K. W. Bennett, Jan 30 p 57
Ultrasonics Makes Ring Welds, Apr 30 p 140
Ultrasound Maps Flaws in Bonds, by W. N. Redstreake, Jan 23 p 58

Union Carbide Corp.:

Abradable Coatings Resist Heat, Apr 30 p 137
Electrode Coats Tools With Hard Carbide, Jan 23 p 56
Research Efforts Keep Welding on the Beam, by H. F. Jones, May 14 p 66

United-Carr, Inc.:

Plated Plastics Ride Design Wave, June 25 p 83

U.S. Electrical Motors Co.:

N/C Tackles Shorter Work Runs, Jan 30 p 97

U.S. Gypsum Co.:

Plastic Checks Die Profiles, by M. K. Young, Feb 27 p 80

U.S. Industrial Chemical Co.:

New Plastic Develops Rubber-Like Traits, Mar 26 p 110
When to Use Plastic Rotational Molding, Jan 30 p 100

U.S. Industries, Inc.:

Long, Short Runs Justified on Heavy-Duty Stamping Line, Feb 13 p 84
Press Makers May Stamp Out Old Record and Form New One This Year, by K. W. Bennett, Mar 26 p 67

U.S. Steel Corp.:

Low-Carbon Steels: New Analyses Improve Enameling Traits, June 4 p 64
Marketers Face Challenge in '64, Jan 2 p 143
Math Model Guides Strip Rolling, June 4 p 64
New USS Strip Mill Fed by Continuous Casting, May 7 p 47
Plasma Arc Takes Thick Slices from Stainless Steel Plate, by F. R. Romeo, Jan 16 p 67
Steel Courts Autos With Ideas, by H. F. Jones, June 11 p 123
Steel Foil May Wrap Up New Sales, by G. J. McManus, Apr 23 p 60
USS Continues to Shop Local, Feb 13 p 121
U.S. Steel Turns to Hard Sell, by G. J. McManus, Jan 9 p 24
X-Rays Record Coating Weights, Apr 16 p 64

Universal-Cyclops Steel Corp.:

Programmer Runs Vacuum Melting, Jan 16 p 80

Universal Grinding Co.:

Abrasive Machining: The Big Bite of Tiny Grains, by R. H. Eshelman, Apr 9 p 93

V

Vacuum Technology

Direct Casting, Vacuum Degassing Score Gains, by G. J. McManus, Feb 6 p 43
Hot Metal, Vacuum Produce Huge Heats, by G. J. McManus, May 28 p 37
Programmer Runs Vacuum Melting, Jan 16 p 80

Visual Industrial Products, Inc.:

Industrial Models: A 3-D Approach Puts Problems in Perspective, by G. J. McManus, June 25 p 75

Vitro Corporation

Coatings Go on Fast, Evenly With Electrophoresis, May 7 p 80

W

Warehousing

Customers, Foreign Steel Spur Changes by Service Centers, by K. W. Bennett, Jan 16 p 37
Hope Fades for Quantity Pricing, Mar 5 p 107
RONS 'Stocks' Motors Quickly, Feb 20 p 159
Service Centers Launch Big Spending Program, Mar 12 p 105

Washington Steel Corp.:

Washington Praises Pressure Casting, by G. J. McManus, Jan 23 p 25

Wastes

Grinding Coolant Sheds Waste, Jan 30 p 95
Palladium Curbs Hydrogen Waste, May 7 p 86

Water

Grinding Coolant Sheds Waste, Jan 30 p 95
Opportunities Flow from Water Project, by R. R. Kay, Apr 16 p 42

Waterbury Farrel Co., See Textron Industries Inc.

Weldability

Aluminum's Boiling Pot of Ideas, by C. L. Kobrin, June 18 p 93
'Enriched' Steels Show New Pep, by C. L. Kobrin, Jan 9 p 54
Hopkins Process Finds New Facets, Feb 6 p 72

Welder & Flexopress Corp.:

Research Efforts Keep Welding on the Beam, by H. F. Jones, May 14 p 66

Welding & Welding Machines

Applications Continue to Mount for High-Frequency Welding, Apr 9 p 101
Challenge: Ways to Work Metals in Rigors of Outer Space, by R. H. Eshelman, Mar 19 p 79
How to Assure Weld Performance, by S. A. Greenberg, Mar 19 p 86
Improved Submerged-Arc Welding Raises Speed and Toughness, Apr 16 p 59
Laser Welding: Set for Action, Jan 23 p 64
Mass Spectrometer Checks Welds, Jan 30 p 98
Plasma Flame Blazes New Trails, by R. R. Irving, Mar 12 p 135
Portable System Furnishes Air for Mechanized Spotwelding, by R. R. Irving, Jan 9 p 52
Research Efforts Keep Welding on the Beam, by H. F. Jones, May 14 p 66
Rods Hold Tight Weld Chemistry, Feb 20 p 127
Ultrasonics Makes Ring Welds, Apr 30 p 140
Welding Rides on a Carousel, Jan 16 p 70
Welds in Rene 62 Resist Cracking, Jan 16 p 77
Will the Laser Make the Grade as a Proven Welding Process? By R. R. Irving, Apr 23 p 85
Wire Cleans Up Weld Problems, June 4 p 71

Western Gear Corp.:

Direct Casting, Vacuum Degassing Score Gains, by G. J. McManus, Feb 6 p 43

Westinghouse Air Brake Co.:

Tests Insure Sound Castings, Feb 20 p 128

Westinghouse Electric Corp.:

Computer Control 'Grows' on Job, by W. N. Redstreake, May 14 p 65
Feeding a Hungry Blast Furnace, June 11 p 148
Fighting Friction's Drag on Motion, by J. J. Obrzut, May 21 p 133
Letters Spell Out Supplier Success, Mar 19 p 125
Machining Needs Change Swiftly, by R. H. Eshelman, June 4 p 35
RONS 'Stocks' Motors Quickly, Feb 20 p 159
To Uncover Problem Managers Reach Men Who Work for Them, by George R. Desi, Jan 2 p 169

Weston Instruments, See Daystrom, Inc.

Wheelabrator Corp.:

Parts Gain Controlled Finish in Continuous Vibrator, by R. H. Eshelman, June 25 p 86

Wheeling Steel Corp.:

Is Steel Capital Spending High Enough? By G. J. McManus, Jan 30 p 76

Whirlpool Corp.:

It Takes Art to Put Payoff in Ideas, by Clifton A. Cobb, June 25 p 62

Williams & Co., Inc.:

Service Suffers in Price Wars, Apr 23 p 127

Wire

Mills Try to Plug Wire Crack in Tariff Dike, by G. J. McManus, Jan 30 p 59
Optical 'Mike' Gages Hot Wire, Feb 20 p 121
Steelmakers Fight for Wire Sales, by G. J. McManus, May 7 p 46
Why Not Use Metal Wires in Filament Winding? By D. V. Rosato, Mar 26 p 102
Wire Cleans Up Weld Problems, June 4 p 71
Wire Makers Invading New Markets, Apr 23 p 127

Worcester Pressed Steel Co.:

Choosing Controls: Better Right Than Tight, by Carter C. Higgins, June 11 p 130

X

X-Ray

Film Package Speeds X-Raying of Heavy Metals Sections, Apr 30 p 138
Putting New Teeth in Inspection, by W. N. Redstreake, Feb 27 p 69
X-Ray 'Mike' Reads Strip Thickness, Apr 9 p 103
X-Ray Unit Made Pocket Size, Jan 9 p 60
X-Ray Unit Speeds Scrap Analysis, Apr 23 p 59
X-Rays Record Coating Weights, Apr 16 p 64

Y

Yawata Iron & Steel Co. Ltd.:

'Enriched' Steels Show New Pep, by C. L. Kobrin, Jan 9 p 54

H. L. Yoh Co.:

Rented Brains Solve Technical Problems, by J. M. Still, Jr., Jan 16 p 44

Youngstown Sheet & Tube Co.:

Washington Praises Pressure Casting, by G. J. McManus, Jan 23 p 25

Z

Zinc

Zinc Casts Die for New Record, by K. W. Bennett, Apr 30 p 101
Zinc Plating Bath Avoids Cyanide, Jan 9 p 62
Zincmakers Introduce New Auto Trim Alloy, Apr 23 p 61

AUTHOR INDEX

JANUARY-JUNE, 1964

B

Baxter, J. D.:

Antitrust Rulings Block Growth, Mar 12 p 106
Fast Business Pace to Rule All Year, May 28 p 38
Nickel Finds New Uses, New Growth, Jan 23 p 40
Small Business' Fight for Share of U.S. Contracts Toughens, Feb 27 p 39
Soft Spots Give Lean Look to New Orders for Durables, Feb 13 p 43

Beaudet, Engene C.:

After All, Whose Job Is It to Create Jobs? Jan 16 p 114
The Boom: Is It Really Beginning? June 4 p 112
Business Change: The Big Challenge Today, Tomorrow, Jan 30 p 150
Can Equipment Be Bought by Remote Control? Apr 16 p 112
Can It Be That Nothing Fails Like Success? Feb 6 p 120
The Case Against Steel Imports, May 28 p 34
Defense Buying: Cost Cutting Can Cost Too Much! Apr 30 p 228
Distributors See Soft Spots With Order Gains, Mar 26 p 69
East-West Trade: Myths vs. Realities for Business, Apr 9 p 168
Efficiency, Ability: Our Best Plusses for Export, May 14 p 142
Glamor Is Where You Find It—Or Where You Make It, June 18 p 154
Gov't & Business: What Better Time to Solve Issues? May 28 p 100
Guidelines: Who's Breaking Them This Time? Apr 23 p 136
How About a Common Market for the U.S.? Jan 23 p 96
Japan Stresses Quality in Drive to Capture More of Tool Market, May 14 p 59
Job Problems: Plan Facts and Blind Alleys, Feb 27 p 122
A New Era of Not-So-Bad Feeling? Mar 19 p 134
1964: One Way to Beat the Averages, Jan 2 p 268
Price Selling: Can Industry Kick the Habit, Mar 26 p 146
Questions, But Not All the Answers to Growth Puzzle, Jan 9 p 92
Quiet Tragedy in the War on Poverty, Apr 2 p 94
'64 Starts Out on the Plus Side, Jan 2 p 125
Skilled Workers: The Big Need Is a Push from the Top, May 21 p 210
State Taxes: Who Pays What, Where and Why? June 25 p 124
Tax Cuts: Can the Economy Keep Cool? Mar 5 p 116
What's So Wrong About Holding Up Our End? Mar 12 p 200
Will Pricing Tactics Become Obsolete? Feb 20 p 168
Will the Real Pentagon Source Please 'Fess Up'? June 11 p 200
Will We Give Up Too Much, Too Soon? Feb 13 p 130

Beedle, L. S.:

Steel Structures Shed Weight, Feb 6 p 74

Beizer, James:

Alcoa OK's Aluminum Ingot Hike, Mar 12 p 104
Aluminum Profits Up; Price Increases Seen, Apr 30 p 103
Auto Designs Are Internationalized, Apr 16 p 36
Chances Fade for New Stockpile Law, June 4 p 34
Copper: More Ore and Talk About Prices, May 28 p 33
Europeans Impressed by U.S. T &D Industry, May 14 p 61
Has Tin Price Rampage Ended? Mar 5 p 36
Helium Markets Are Expanding, June 18 p 65
Meeting Probes Metals Mining and Uses, Feb 27 p 43
Olin Tries Aluminum Ingot Price Hike, June 11 p 113
Packaging Industry Can't Be Contained, Apr 30 p 100
Tin: Cheap Prices and Political Shortages, June 11 p 117

Bennett, K. W.:

Airconditioning Sales Continue Hot Pace, Jan 30 p 64
'Alloys' Strengthen Plate Sales, Feb 20 p 90
Aluminum Barges into Marine Markets, Apr 9 p 69
Appliance Makers Boost Capital Outlays; Shoot for Record Year, Mar 12 p 101
Appliance Sales Are Sizzling, May 28 p 36
Bargains Gone in Merger Market, Feb 13 p 50
Color TV Sales Take on Bright Hue, Apr 2 p 26
Computer Makers Eye Industrial Market, Feb 27 p 46
Customers, Foreign Steel Spur Changes by Service Centers, Jan 16 p 37
Design Engineers Need Help Now, May 21 p 106
Earthmovers Push Ahead in Sales, Feb 6 p 46
Electronic Sales in Solid State, June 25 p 47
Fabricator Sales Set for Takeoff, Apr 30 p 104
Farm Equipment Sales Expected to Top Bumper '64 Next Year, May 21 p 107
Furnace Equipment Sales Warm Up, June 11 p 116
Heating Future Has Healthy Glow, Mar 5 p 38
L-P Tank Sales Expanding Again, Apr 16 p 38
Magnesium Capacity Is Due for Boost, Jan 9 p 26
Powdered Metals Press for Records, May 7 p 50
Press Makers May Stamp Out Old Record and Form New One This Year, Mar 26 p 67
Railroads Gain Speed in Drive for Bulk Transport Market, June 4 p 29
'64 Looks Good for Appliances, Jan 2 p 132
Ultrasonics Industry Looking to Climb onto Profit Curve, Jan 30 p 57
Zinc Casts Die for New Record, Apr 30 p 101

Betko, Vincent:

Quality Sights Raised to Meet New Demands, Apr 30 p 116

Binns, G. H.:

Plaster or Investment Casting: When to Use Each Method? June 4 p 68

C

Campbell, Tom:

The Art of Getting Through: Tough, But It Can Be Learned! Jan 2 p 5
Combating Steel Dumping: With a Tough, Hard-Nosed Plan! Mar 26 p 5
Don't Kid Yourself, Man: Automation Is the Problem, May 14 p 5
Elders Vs. Youngster: The Chasm Is Becoming Much Wider! Mar 5 p 5
Generators in the Same Boat with Uneasy Scrap Industry, Jan 30 p 60
Heart of the Latin Matter: Panamanian Hassle Points It Up! Jan 23 p 5
The Honeymoon Is Over: But the Marriage Must Go On! Feb 27 p 5
If It Ain't Any Fun: You Better Git a New Job! May 7 p 5
Industrial Self-Centeredness Can Be a Serious Blow to Progress! June 18 p 5
Let's Cut the Mustard: We Fight in S. Vietnam or Retire! Mar 19 p 5
The Long Pull: It Begins to Look Good! Apr 9 p 5
The MacArthur Few Knew: He Was a Great Humanitarian! Apr 16 p 5
Management and Supervision: Yes, Virginia, There is a Difference, Apr 30 p 5
Nehru's Death Is Serious: Its Impact Could Be Chaotic! June 4 p 5
Older Men and Change: The Other Side of the Coin! Mar 12 p 5
Our Feet of Clay: in the Most Unusual Place! Apr 2 p 5
Our Foreign Aid Plan: Is It on its Last Legs? Jan 16 p 5
Positive Approach: Without It, You're Dead! June 11 p 5
Resistance to Change: it's Worse Than Communism! June 25 p 5
Henry A. Roemer, Sharon Steel Director, Retires, June 4 p 37
The Scandinavians Do It: Why Can't We Americans Do It? May 21 p 5
The Scrap Industry: Is It Dying? Or Reviving? Jan 30 p 5
Some Latin Suggestions: Why Don't We use a Few? Feb 13 p 5
Steel Explosion: It Is Now on Its Way! Jan 9 p 5
Steel Service Centers: Steel Industry Devil's Advocate! May 28 p 5
Tougnened Free Enterprise: It's Well Nigh Impossible to Kill, Apr 23 p 5
U.S.A.—Canadian Common Market: Hardly Now, But Some Day, Maybe? Feb 6 p 5
Wnat Freedom, Pal? Are You Sure You Have It? Feb 20 p 5

Cathey, P. J.:

Aluminum Wants Transport Market, Feb 20 p 88
Automation Lifts Handling Sales, May 14 p 64
Computer Uses "Logic" to Direct Engineering, Mar 26 p 84
Controls Keep Sales Efforts on Target, May 14 p 76
Price Fire Engulfs Aluminum, Fans Out to Many Product Areas, Jan 23 p 23
Research Powers Battery Sales, Apr 23 p 62

Cobb, Clifton A.:

It Takes Art to Put Payoff in Ideas, June 25 p 62

Cooper, A. M.:

Business Planes Crowd the Sky, Jan 16 p 39

Crosby, R. W.:

Action Due Soon on Tariff Changes, May 21 p 110
Budget Needs Support of Business, Jan 30 p 62
Congress May Act on State Taxes, June 18 p 63
Congress Seeks Ways to End Chaos and Waste in R&D, Apr 2 p 24
Consumer Protection Hits All Industries, Feb 13 p 49
Experts Wonder Where Tax Cut Went, May 21 p 105
Fabricators Hit "Price Squeeze," June 25 p 45
Fiscal Experts See Economic Boom, Feb 27 p 42
Government and R&D: Is Honeymoon Over? Mar 12 p 103
Industry Faces Tough Battles, Jan 2 p 127
Industry Fights Price 'Guidance', Feb 20 p 87
Industry, Labor Take Stitch-in-Time Tack in Contract Negotiations, Apr 9 p 63
Mixed News in Job Trend Survey, Apr 23 p 58
Pentagon Speeds Up Its Tool Buying, May 7 p 45
President's Role Hit in Surplus Reform Bill, Feb 6 p 45
Record Business Year Is Forecast, Mar 19 p 58
Steel Urges Treasury 'Revise Dumping Act', Jan 30 p 63
Trust Busters Take Initiative in Seeking Violations, Jan 9 p 21
U.S. Snipes at Business Privacy, Mar 5 p 34
Washington, p 11 all issues
Will Industry Join Poverty War? Jan 16 p 40

D

Davis, C. A.:

Staff Engineers Aid Line Men in Building Profits, Mar 5 p 50

Desi, George R.:

To Uncover Problem Managers Reach Men Who Work for Them, Jan 2 p 169

E

Eshelman, R. H.:

Abrasive Machining Goes Big, Feb 27 p 55
Abrasive Machining: The Big Bite of Tiny Grains, Apr 9 p 93
Automakers Give Tool Orders Sharp Boost, May 28 p 47
Can Computers Cut Out 'Debugging' Period? Feb 6 p 53
Challenge: Ways to Work Metals in Rigors of Outer Space, Mar 19 p 79
Don't Brake Technical Progress, Mar 26 p 81
Equipment Buying on Easy Terms, June 4 p 45
Hitching Ride on R&D Fallout Is Way to Spur Growth, Feb 6 p 56
How Long Until 'Full' Automation? Apr 9 p 79
Human Adjustment to Automation Studied, Feb 20 p 101
Industry Wants More New Machine Tools, Jan 9 p 35
Is Technical Education Lagging? Apr 16 p 43
Machining Needs Shift Swiftly, June 4 p 35
Metal Industries Step Up Automation Trend, May 21 p 119
Modular Grinder Is Tailored to Its Tasks, June 11 p 127
21—IRON AGE INDEX
N/C Blends With Transfer Lines, Mar 19 p 65
New N/C Concept Cuts Parts Down to Size, Feb 13 p 59
New Tool Orders Soared in January, Mar 5 p 47
Parts Gain Controlled Finish in Continuous Vibrator, June 25 p 86
Pre-Set Tools Cut Downtime, Apr 30 p 113
Rotary Indexers Find New Slots, Apr 23 p 71
Profit Problems Get Tool Builders' Attention, May 14 p 73
Stiff Spindle Speeds Cutting, June 25 p 78
Tax Reform Boosts Tools to Decade High, Jan 30 p 73
Testing for 100% Reliability, May 28 p 66
Tomorrow's Machining Already Taking Shape, June 25 p 59
Toolmen Look Toward Billion Dollar '64, Jan 2 p 141
Versatility Is Star of Press Showroom, June 18 p 79

F

Foubert, E. F.:

A Well Planned Program Can Carry the Message, Jan 2 p 165

G

Garatoni, Paul:

Tailored Tests Upgrade Copper, Apr 23 p 92

Gillen, Stanley:

Make Meetings Work for You, June 2 p 183

Goodyear, Austin:

Swift, Deliberate Action Smooths Merger Moves, May 28 p 50

Greenberg, S. A.:

How to Assure Weld Performance, Mar 19 p 86

Gunderman, G. J.:

Coded Form Puts Zip in Handling, May 14 p 91

H

Hall, Lee:

Computer Verifies Beam Design, May 7 p 76

Higgins, Carter C.:

Choosing Controls: Better Right Than Tight, June 11 p 130

Hume, W. C.:

He Can Make the Difference Between Profit and Loss, Jan 2 p 176

I

Irving, R. R.:

Plasma Flame Blazes New Trails, Mar 12 p 135
Portable System Furnishes Air for Mechanized Spotwelding, Jan 9 p 52
Will the Laser Make the Grade as a Proven Welding Process? Apr 23 p 85
Wound Tubing: Novel Approach to Aluminum Fabrication, May 7 p 73

J

Johnston, Robert:

Air Gages 'Pull In' Tolerances, Feb 13 p 80

Jones, H. F.:

AM Caught in 'Buy American', Feb 20 p 97
AM Launches a New 'Typhoon', Apr 9 p 75
Aluminum Gains Again in Autos, Jan 23 p 35
Attention Centers on Big Cars, May 7 p 55
Auto Plastics Pick Up Speed, Mar 12 p 113
Automakers Must Move Ahead or Lose Out, Apr 30 p 109
Automakers Shift to Fourth Gear, Apr 23 p 67
Automakers Shoot for New Record, Jan 2 p 137
Automakers Stress Better Quality, Apr 9 p 68
Autos Play "Follow-the-Leader" to Keep '65 Sales Moving, June 11 p 111
Barracuda, Mustang Enter Sports Arena, Apr 2 p 29
Can UAW Settle Without Strike? Jan 2 p 129
Chrysler Expands Canadian 'Trade', Mar 5 p 43
Daytona Test Feathers Comet's Nest, Jan 16 p 49
Die Shop Pressed for Press Time, Mar 12 p 108
Diversification Pays Off for IH, June 4 p 41
Electroplating Gains as Primer, May 14 p 71
First Word Is Out on Auto Steel Dip, Mar 5 p 33
Ford Frames Changes for '65 Models, Feb 27 p 51
Four Smog Devices OKd by California, June 25 p 55
GM Bets Another $2 Billion, Mar 26 p 79
GM Stylists Raise the Roof, Feb 6 p 51
GM's Test Program Proves Out, May 21 p 115
GMC to Field Widest Medium Diesel Line, Jan 9 p 31
Hitting the Numbers Pays Off, Apr 30 p 102
L-M Springs First Mid-'64 Autos, Jan 30 p 69
Materials Hold Auto Spotlight, Jan 23 p 28
New Designs Needed for Autos, Mar 19 p 63
Pack More Horses Under the Hood, May 28 p 43
Parts Makers Protest Tariff Rebate Plan, June 11 p 115
Plymouth and Dodge Unveil New Engines, Feb 13 p 55
Profit Dip Hurts AM Progress Sharing, June 18 p 70
Research Efforts Keep Welding on the Beam, May 14 p 66
Retreat from Boredom Pays Off, Jan 16 p 54
SAE Seeks Solution to Smog, June 18 p 75
Steel Courts Autos With Ideas, June 11 p 123
UAW Goes After Big Package as Automakers Have Big Year, May 28 p 31
UAW Is Aiming for Big Slice of Auto Industry Profit Pie, Feb 6 p 39
UAW Leave Door Wide Open for Anything — as Long as It's 'More', Apr 2 p 21
Wagons Join the Style Parade, Apr 16 p 41
Workers React to Responsibility, Apr 23 p 74

K

Kay, R. R.:

Aerospace's Future Hinges on Planning, Jan 23 p 36
All-Out Push to Land Industry, June 11 p 124
Aluminum Shines, Lead Dulls in Washington, Apr 2 p 30
Approval Seen for Smog Control Units, Mar 5 p 44
California Prepares for Spending Cuts, Feb 13 p 56
California Profits Measure Success, Apr 23 p 68
California's Blueprint for the Future, Mar 26 p 80
California's Economy: Progress and Problems, Mar 19 p 64
Can Exports Lessen Business Ills? Apr 9 p 76
'Company Town' Hurts When Company's Down, Jan 9 p 32
Design Battle Highlights Race, May 21 p 116
Farwest Canners Have Big Tinplate Appetite, Apr 30 p 110
Farwest Helps Set Pace in Race to the Moon, May 28 p 44
Golden Year Ahead for Farwest Metals, Jan 2 p 138
Huge Steel Iceberg to Seek Oil, June 4 p 42
Japanese Offered Iron Ore Deal, Feb 20 p 98
Kaiser Tells of Progress, Plans, June 18 p 76
No Slowdown Due for Farwest Construction, Jan 16 p 50
Opportunities Flow from Water Project, Apr 16 p 42
Planning Speeds Business Growth, Jan 30 p 70
Project Gets Workers Interested in Politics, Feb 6 p 52
Stanford Builds Atom Smasher 2-Miles-Long, May 14 p 72
Washington Plans for Atom Center, Feb 27 p 52
What's Keeping the Northwest Strong? June 25 p 56
Why California Must Diversify, May 7 p 56

Kobrin, C. L.:

Aluminum Made Into Bearings by New Powder Process, Apr 30 p 135
Aluminum's Boiling Pot of Ideas, June 18 p 93
Die Stamps and Stacks in Sequence, Feb 20 p 122
'Enriched' Steels Show New Pep, Jan 9 p 54
Mill Rolls Circular Steel Plate, Feb 6 p 80
Platers Put 'Dirt' to Work, Feb 13 p 77
Powder Metallurgy Gets Rolling, Apr 23 p 89
Stainless Shakes Off Old Image, Jan 30 p 87

L

Legun, A. F.:

Photo-Etching Makes Tiny Parts with Hairline Accuracy, Apr 16 p 70

Lindbloom, R. H.:

Adhesive 'Cold Bonds' Steel to Paper Honeycomb Core, Mar 19 p 84

M

McManus, G. J.:

Can Market Battle Forces Basic Changes in Aluminum, Steel, Mar 5 p 31
Coming — Dumping Law Overhaul, Mar 26 p 71
Continuous Casting in Decisive Period, Feb 20 p 91
Did 1963 Launch a New Era? Apr 2 p 35
Direct Casting, Vacuum Degassing Score Gains, Feb 6 p 43
Dumping Decisions May Mark a Change, Apr 2 p 23
Dumping of Steel Is Global Problem, Jan 2 p 128
Flexibility Rules Steel Pricing, June 18 p 68
Foreign Market Research Demands Realistic Approach, Feb 27 p 58
Hand That Feeds Is Snapped At, June 25 p 43
Have Stainless Prices Been Cast Adrift—or Are They More Secure? Apr 9 p 66
Hot Metal, Vacuum Produce Huge Heat, May 28 p 37
How Foreign Mills Look to U.S. Steelmakers—From the Inside, Feb 20 p 85
How Industry Views Integration, Feb 27 p 44
Industrial Models: A 3-D Approach Puts Problems in Perspective, June 25 p 75
Is Steel Capital Spending High Enough? Jan 30 p 76
Japan's Views About 'Dumping', Apr 16 p 36
Marketing Discord Increases as Aluminum Orders Gain, May 7 p 43
Mills Look to Expanding Future, Mar 19 p 56
Mills Try to Plug Wire Crack in Tariff Dike, Jan 30 p 59
Steel Foil May Wrap Up New Sales, Apr 23 p 60
Steel Plate Orders Push Capacity, May 14 p 62
Steelmakers Fight for Wire Sales, May 7 p 46
Steelmen Cite Prospects, Problems, June 4 p 32
There's More to Kaiser Plan Payoff Than Cash to Workers, Mar 19 p 51
U.S. Steel Turns to Hard Sell, Jan 9 p 24
Washington Praises Pressure Casting, Jan 23 p 25
World Steel Demand Is Rising, But Is Import Threat Receding? May 21 p 103

McMurry, Dr. Robert:

Individual 'Values' Hold the Key, Jan 2 p 179

N

Neal, H. R.:

Materials Battle Is Tug-of-War, Feb 20 p 104
Price Hikes Are Inevitable, Mar 26 p 72

O

Obrzut, J. J.:

Fighting Friction's Drag on Motion, May 21 p 133

P

Pace, Stanley C.:

Travel Indirect Path to Results, Jan 2 p 162

Payne, Marshall:

Meeting Daily Is *Not* Too Often, Jan 2 p 172

Phipard, H. F.:

Raycarl Process: Its Impact on Cold-Headed Parts, June 4 p 61

Porter, Lester G.:

Common Goal Welds Team Efforts, Jan 2 p 158

Powell, Walter H.:

Modern Personnel Man Can Get Management's Message Through, Jan 2 p 186

Prudden, P. D.:

Designers Trim Production Costs by Clarifying Blueprints, Jan 16 p 74

R

Raddant, R. D.:

Demand Swings to Durables With a Rush, Mar 12 p 121
Steel Turns the Profit Corner, Feb 6 p 42
Technology Goes Abroad by Rough Sales Route, June 18 p 82

Redstreake, W. N.:

Computer Control 'Grows' on Job, May 14 p 65
Flexible Drives Suppress Heat, Apr 2 p 62
Hot Targets Flash Flaw Patterns, Mar 5 p 65
New Brain Has Big Memory, Apr 16 p 35
The Peacetime Atom Blasts Away at Metalworking Barriers, May 14 p 87
Pneumatic N/C Machine Tools Put Job Shop 'In the Chips', Apr 16 p 62
Putting New Teeth in Inspection, Feb 27 p 69
Total Quality Control Program Puts 'Dent' in Rework Costs, Feb 20 p 124
Ultrasound Maps Flaws in Bonds, Jan 23 p 58

Riley, F. J.:

Machines Do Work of Skilled Hands, Feb 13 p 82

Rohan, T. M.:

Bearings Roll into New Markets, Mar 26 p 74
Business Won't Take Summer Vacation, June 25 p 46
Can Maintenance Costs Be Cut? Feb 6 p 44
Coal Mining Unearths New Look, May 21 p 109
Fasteners Latch on to Surging Markets, Feb 27 p 41
Field Trips Pay Off in Quality, June 25 p 48
Foundry Business Has Golden

Cast, Mar 5 p 35
Furnace Fires Ferroalloy Fight, Jan 23 p 26
Good Start for Great Lakes Ore, June 4 p 36
Hand Tools Hammer Out Big Sales, Feb 13 p 46
Induction Furnaces Are Hot, Jan 16 p 42
Mesabi Future Hangs on Fall Referendum, Jan 23 p 27
Pellet Boom Precipitates Heavy Equipment Spending Fallout, Apr 16 p 31
Retraining Program Benefits Industry, Apr 9 p 70
Screw Machine Products Fight Sales Problems, Feb 20 p 92
Small Businesses Get a Boost, Jan 2 p 130
Take Heavier Cut, Abrasive Users Told, Mar 26 p 70
Value Analysts Earn as They Learn, May 21 p 122

Romeo, F. R.:

Plasma Arc Takes Thick Slices from Stainless Steel Plate, Jan 16 p 67

Rosato, D. V.:

Why Not Use Metal Wires in Filament Winding? Mar 26 p 102

Ross, M. I.:

EDM Tailors Tooling Precisely, June 4 p 72

S

Sandford, J. E.:

Engineers Put Friction to Rout via New Lubrication Concept, Jan 23 p 51
Master Plan Guides New Products to Moneymaking Maturity, Apr 2 p 51
Platers Stress Speed, Versatility, June 25 p 50
Plating Teams Up With Rolling to Clad Nickel onto Steel, May 28 p 63
Teflon Seals Aluminum Hardcoat, Mar 19 p 82

Starin, F. J.:

Nonferrous Markets Continue Growth, Jan 2 p 131

Still, Jr., J. M.:

Plastics Shape Production Records, Feb 6 p 41
Play Safe and Keep Contracts Healthy, Jan 9 p 28
Rented Brains Solve Technical Problems, Jan 16 p 44
Slow Managers Lose in Fast-Paced World, Apr 16 p 46

Strasser, Federico:

How to Design Stiffening Ribs for Sheet-Metal Stampings, Mar 19 p 90

Swenson, B. K.:

Gear Sales Shift Toward New Highs, June 11 p 118

W

Woodward, Carl E.:

Plan Steps Up R&D Pace and Payoff, Jan 9 p 38

Y

Young, A. W.:

Adhesives Set Up New Products, Apr 30 p 127
ECM Sculptures Complex Shapes in Tough Alloy Forgings, June 11 p 143
Thin Foil Gets Heat Treatment in Feed-Through Furnace, June 25 p 80

Young, M. K.:

Plastic Checks Die Profiles, Feb 27 p 80

The IRON AGE A CHILTON PUBLICATION Chestnut and 56th St., Philadelphia, Pa. 19139

Printed in U.S.A.